Education.au and metadata for events

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Abstract

This paper outlines ongoing work in the area of metadata for events which is being undertaken by Australia's ICT (Information and Communications Technology) in education agency, education.au. Calendars of conferences, opportunities and celebrations of interest to Australia's education and training community are a core service of Education Network Australia (edna), education.au's premier service. The ongoing development of an events metadata application profile for the edna calendars is described, and the current implementation discussed. The process of refinement involves the metadata profile, the metadata repository, the edna website used to display the calendars and the xml services used to share events metadata with external sources. The paper concludes with a discussion of the future directions for events metadata in edna and other education.au projects, including our wish list of increased participatory and automated generation of events metadata, and development of relationship metadata to provide a more integrated user experience across services.

Keywords: application profiles, Education Network Australia, edna, education.au, events metadata, calendars

1. About Education Network Australia (edna)

As Australia's ICT in education agency, education.au (2007) manages a number of key national projects on behalf of Australia's education and training community. This paper presents a case study of how one of these projects, namely Education Network Australia (edna) has grappled with the development of a metadata application profile for events.

Established in 1996 as an online service to support and promote the benefits of technology for education and training in Australia, edna is a collaborative information service which is funded and developed in partnership with the Australian education and training community. The underpinning principle of edna is that a better informed and connected community of educators and educational administrators leads to better teaching, more informed students and a more effective educational community.

edna is an aggregator service. It investigates, compiles, filters, evaluates, annotates and consolidates quality information and provides access to online resources, news, networks, events, projects and research for educators. The project supports a set of websites, services, collaborative workspaces, discussion lists and xml-based information services which are used by stakeholders on their own websites, portals, RSS readers and handheld devices. Content syndication via RSS, federated search and federated security is a key feature of the edna project.

The edna project has established a national and international branding offering quality, trusted and innovative services and has enhanced the reputation of Australian education internationally as a leading proponent of online services to support teaching and learning. It works to identify synergies for the exchange of information and resources, as well as frameworks for development and enhancement of services. An important role of the edna project is to promote the values of interoperability, open standards, information sharing and collaboration to achieve benefits for the education and training community.

2. edna Events Calendars

The events calendar functionality is core to the edna website, giving Australian educators the ability to readily discover events of interest. The edna events calendars are compiled from multiple sources into one easy location from which educators can browse or search for local, national, international or subject specific activities of interest. The edna event calendars can be seen on the edna website at http://www.edna.edu.au/events (Education Network Australia, 2007).

2.1. Calendar Features

The edna events calendars include an advanced search interface which provides a keyword search, a search between two dates, plus search by location, education sector and calendar. The results are displayed in a calendar of events results list. A browse by location is also available.

RSS auto discovery is built into the events calendars and events search, with the rss icon appearing at the top and bottom of all events lists. Users can also download individual events to their personal calendar by clicking an ical icon.

2.2. Event Types

The events calendars on edna have traditionally catered for either a particular audience or a type of event. The audience-focused calendars include topic-related calendars such as the library events calendar, as well as education sector calendars for early childhood educators and the VET (Vocational Education and Training) and ACE (Adult and Community Education). Other calendars describe particular types of events, for example online events. A vocabulary to describe the various event types aggregated by edna events calendars was developed in 2005 as a refinement of the DC.Type element. edna events can be categorised as either:

1. Academic events, such as semester and term dates,
2. Conferences and professional events, including lectures, meetings, seminars and workshops
3. Commemorations, including international, national and state days and weeks of significance and religious observances, typically events recurring on an annual basis, or
4. Opportunities, highlighting awards, competitions, scholarships and grant applications.

It is important to note that at this stage traditional academic courses have not been included in edna's events calendars. The complete vocabulary for event types is presented in Table 1.

3. Events Metadata

The purpose of the edna events metadata is to support interoperability across all sectors of education and training in Australia in the area of events discovery and management. The edna events metadata profile described below is based on the Dublin Core Metadata Initiative (DCMI, 1998) and the edna metadata standard v1.1 (education.au, 2001). The principal application of the edna events metadata profile is to facilitate the aggregation of metadata about events for the edna repository of quality online content for education and training. The profile is used to generate events calendars on edna and related websites, and also to provide syndicated event content through events API and feeds services.

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TABLE. 1. Scheme for ev-type.

Term	Description
Award	Process inviting nominations for acknowledgement or recognition of achievement or merit, eg teacher excellence awards
Briefing	Informational talk or oral presentation to detail instructions
Call for papers	Process inviting presenters to submit proposals for papers to conferences, events and journals
Competition	Process involving a contest from which individuals, groups or institutions are selected as winners on the basis of achievement, contribution or chance
Conference	An assembly of people gathering to consult, discuss, learn about and view material related to a theme
Exhibition	A display, (either temporary or ongoing) of works of art, skills, artifacts, multimedia representations etc
Festival	An organised series of acts, performances or events, often related to a theme or cultural group
Forum	Meeting for open discussion between participants communicating online or in person
Grant	Process inviting applications for a grant for research or study activity
International Day	Calendar date set aside to observe certain things or principles internationally, often organised by the United Nations General Assembly or by UNESCO
International Decade	Decade set aside to observe certain things or principles internationally, often organised by the United Nations General Assembly or by UNESCO
International Month	Month of the year set aside to observe certain things or principles internationally, often organised by the United Nations General Assembly or by UNESCO
International Week	Week of the year set aside to observe certain things or principles internationally, often organised by the United Nations General Assembly or by UNESCO
International Year	A year set aside to observe certain things or principles internationally, often organised by the United Nations General Assembly or by UNESCO
Lecture	A formal method of teaching by giving an oral presentation on a subject usually to a class
Meeting	An assembly of people to consult or discuss usually in a formalised way and with a specific goal
National Day	Calendar date set aside to observe certain things or principles nationally
National Decade	Decade set aside to observe certain things or principles nationally
National Month	Month of the year set aside to observe certain things or principles nationally
National Week	Week of the year set aside to observe certain things or principles nationally
National Year	A year set aside to observe certain things or principles nationally
Performance	An artistic or dramatic production (eg. a ceremony, play, live performance artist, piece of music etc)
Presentation	A means of showing or demonstrating information to an audience on a particular topic usually accompanied by illustrative material. May be online or in person

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TABLE. 1. Scheme for ev-type (continued).

Term	Description
Religious Observance	A day or period of time set aside to celebrate or commemorate an event or season of importance to a religion
Scholarship	Process inviting applications for a scholarship for research or study activity
Semester Date	A significant date related to the academic calendar of an educational institution which refers to semesters
Seminar	A meeting for exchange of ideas, or portion of a course taught through small group discussion
State Day	Calendar date set aside to observe certain things or principles at a state or territory level, typically involving a public holiday
State Week	Week of the year set aside to observe certain things or principles at a state or territory level
Term Date	A significant date related to the academic calendar of an educational institution which refers to terms
Tour	A structured group or self-directed activity involving experiential learning through actual or virtual travel
Webinar	An online seminar that may contain audio and video
Workshop	A brief intensive course for a small group typically with a degree of attendee participation, problem solving or hands-on exercises

3.1. edna **Metadata Standard 1.1**

Since its early years the edna project has aggregated and hosted a range of resource types including online professional resources, news, events, email lists and online communities or groups. However, the Dublin Core-based edna metadata standard developed in 1998 and revised in 2001 did not specifically address metadata for events, and a separate repository was established to store events metadata and generate calendars on the edna website. A change of repository software in 2005 to DSpace (2005) prompted edna to consider whether the metadata about events should be integrated into the same repository as its resources and news metadata. While DSpace out of the box did not accommodate this, choosing open source repository software enabled edna developers to customise the repository to facilitate such integration. The elements from the edna Metadata Standard 1.1 used for events calendars are given in Table 2.

TABLE 2. Elements from edna metadata standard 1.1.

Elements from edna **metadata standard 1.1 used for events**	
DC.Identifier	DC.Language
DC.Title	DC.Rights
DC.Description	DC.Type
DC.Subject	edna.Audience
DC.Publisher	

3.2. edna **Events Metadata Application Profile**

To determine whether an item should be catalogued as an event or as a resource in the edna repository we had to define terms such as 'event' and 'calendar' which was not such a straightforward exercise. The *Oxford English Dictionary Online 2nd edition* (1989) describes an event as "anything that happens, or is contemplated as happening; an incident, occurrence". The definition of a calendar is just as broad, "a contrivance for reckoning days, months, etc." or even "a list or register of any kind". In the past, edna calendar functionality has been used in this secondary manner, as a register or notice board of library books for schools or reviews of software. This has now largely been discontinued with the advent of collaborative online tools such as wikis, and *date* is now the defining element for edna events.

The DCMI type vocabulary definition of *event* issued in 2000 is still a most useful description: "A non-persistent, time-based occurrence. Metadata for an event provides descriptive information that is the basis for discovery of the purpose, location, duration, and responsible agents associated with an event. Examples include an exhibition, webcast, conference, workshop, open day, performance, battle, trial, wedding, tea party, conflagration" (DCMI, 2006). Discussion on whether to catalogue a particular item using the edna metadata standard or the edna events metadata application profile (education.au, 2006) centres on the date elements required. Our experience is that an event is difficult to describe adequately using only the DC.Date refinements of Created, Valid, Available, Issued and Modified that are provided for through Dublin Core and the edna metadata standards.

This issue prompted education.au *limited*, in collaboration with other Australian education organisations, in particular the New South Wales Department of Education and Training, to develop an events metadata profile with a new element of event date. It is interesting to note that the namespace was a cause of debate in this development, and eventually the very generic, ev (event) prefix was selected for the element names and their associated vocabularies.

3.3. Event Date

Table 3 lists the edna event date refinements that were agreed upon to enable events described using edna events metadata to map to other calendar standards, most importantly the iCalendar standard (Dawson & Stenerson, 1998) which uses date start, date end and duration. The inclusion of paper submission and registration date information was particularly important to the Higher Education sector, and was included to support a 'What's on today' or 'What's due today' functionality.

3.4. Event Organizer

Another element which had caused concern in the edna metadata standard was where to describe the contact person for an event. While the Publisher or Creator for a conference was predominantly the professional association or institution sponsoring the event, the organisations usually wanted the contact details of a contracted event organizer to be most prominent in the metadata. To accommodate this, an ev.organizer element was added to the edna events profile (see Table 4).

3.5. Event Location

At the same time a common language was developed to detail additional metadata for event location (see Table 5). Ev-region was a significant refinement which enabled state education jurisdictions to take the edna vocabulary which indicates region to the state level only, and further refine events for their users to the local regional level. For instance, edna would indicate region as NSW, and the New South Wales TALE portal could add Western Sydney when importing this edna event to their calendar.

TABLE 3. Element: ev-date.

Element Name	Element Refinements	Description	Encoding Scheme	Example
EV.Date		**Date for the event.**		
	Start	The date on which the event starts.	DCMI Period W3C-DTF	YYYY-MM-DD
	End	The date on which the event ends.	DCMI Period W3C-DTF	YYYY-MM-DD
	Duration	The number of hours, days, weeks or years that the event is active		A text field 3.30-6.30pm 1 hour 1 day 1 week 1 month 1 year
	EarlyRegistration	The due date for early registration to take advantage of discounted fees	DCMI Period W3C-DTF	YYYY-MM-DD
	Registration	The last date for registration for the event	DCMI Period W3C-DTF	YYYY-MM-DD
	AbstractSubmission	The due date for the submission of abstracts of papers for the event	DCMI Period W3C-DTF	YYYY-MM-DD
	PaperSubmission	The due date for the submission of papers for the event	DCMI Period W3C-DTF	YYYY-MM-DD

TABLE. 4. Element: ev-organizer.

Element Name	Element Refinements	Description
EV.Organizer		Information about the entity coordinating this event.
	OrgName	The organisation primarily responsible for coordinating this event.
	ContactName	The contact person for this event.
	Address	The contact postal address for this event.
	Email	The contact email address for this event.
	Phone	The contact telephone number for this event.
	Fax	The contact fax number for this event.
	URL	The URL for the entity coordinating this event.

TABLE 5. Element: ev-location.

Element Name	Element Refinements	Description	Encoding Scheme
EV.Location		The location of the event	
.	Address	The venue and street address of the event	
	Town	The town or suburb of the event. Excludes capital cities	
	City	The city of the event	TGN (Thesaurus of Geographic Names)
	Region	The region of the event	ev-region
	Country	Country	TGN
	Postcode	Postcode of event location	

TABLE 6. Element and scheme: ev-mode.

Element Name	Element Refinements	Description	Encoding Scheme	Example
EV Mode		The way in which the event is presented	Ev-mode	Online Face to face Online and face to face

TABLE 7. Element: ev-accreditation.

Element Name	Element Refinements	Description	Encoding Scheme	Example
EV Accreditation		An entity or programme by whom the event is accredited		
	Code	An identification code of the event for accreditation purposes		
	Stage	A stage or level of accreditation for which the event is relevant		
	Hours	The number of hours of accreditation activity granted by engagement or completion		A text field 3 hours

3.6. Event Mode

Online conferences and events are becoming increasingly important to edna users, and while initially it was thought than an encoding scheme for ev-region that included the value of 'online' would be the best way to indicate that an event was occurring online, it became apparent that a separate element was required. Event mode (Table 6) was added to the profile, and while currently the vocabulary has only three values (online, face to face, online and face to face), this may be an area that requires further development in the near future to identify synchronous and asynchronous activities.

3.7. Event Accreditation

The events metadata profile was further refined in late 2006 in conjunction with a number of states, and elements describing accreditation of events in the area of professional learning were added (Table 7). This reflects an increasing priority in Australian education in the areas of quality teaching standards, accreditation and continuing professional development of educators.

All these schemes are published separately and maintained in the Australian Metadata for Education Group (2007) at http://www.groups.edna.edu.au/course/view.php?id=1132.

4. Events Issues

4.1. Interoperability

Organisations are encouraged to implement, map to and/or adapt the edna events metadata profile to enable interoperability and exchange of their resources. edna provides for users to have an RSS feed of these calendars either as complete list for use on their own website, or a feed of newly added events delivered into RSS reader or browser. Individual event records can be downloaded to the user's computer via the iCalendar format. However, since developing this functionality in 2003, other online calendar formats have emerged, including the popular Google calendar (2007), and it is time for edna to ensure it offers optimum mapping of events metadata to suit additional formats. Increased interest in geospatial mapping for events, and Geographically Encoded Objects for RSS feeds provides further issues for investigation.

4.2. Automated metadata

Events are time consuming to catalogue, especially as edna undertakes to describe the event itself rather than the event's website, in order to provide collated information in a consistent format for users and save them time. Educators, members of the public, professional associations, networks and schools are encouraged to submit details of events they are planning that are of interest to educators through the askedna service at http://www.edna.edu.au/suggest/, but more automation of metadata and harvesting of events metadata directly from contributing calendars is highly desirable. While edna is a major exporter of events metadata, we would also like to import events into the edna repository rather than cataloguing events manually. Ingesting metadata from commercially developed repositories, particularly for scholarship and grant opportunities is a very attractive option.

4.3. Archiving

A major issue for those maintaining event calendars is whether to archive information about completed events or to continue to provide access to an event's website while it remains available. Except for recurring annual events such as commemorations, edna currently sets an automatic archive date for all events the day after the end date of the event. This means that past events are not accessible through edna search or browse. While this is appreciated by most users and reduces the need for edna cataloguers to revisit conference websites to check their availability, there are occasions where a history of an event, or series of events is valuable. While

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conference papers published online will usually be catalogued as resources in the edna repository, they can lose their context when the event metadata record is withdrawn.

4.4. Calendar Formats

It has been a significant challenge to develop a metadata application profile in a collaborative manner that enables several organisations to generate different online formats of events calendars. The complexity of supporting a variety of external display templates from the one events schema can be seen by comparing edna's three types of calendar, with the Government Education Portal (2007) calendar, and the Carrick Institute's conferences and events (2007) page. Different formats or layouts apply or rely on different parts of the metadata, so consistency and quality is a high priority. Review of existing and developing calendar formats is ongoing and these are listed at http://www.groups.edna.edu.au/mod/resource/view.php?id=38834.

In addition to its online version at http://schools.edna.edu.au/calendar, the edna events metadata is used to produce a print version of the Australian Schools Calendar (2007) of commemorations, celebrations and opportunities. Each year this calendar is produced as a double-sided A2 wall calendar and is distributed to all Australian schools, preschools, libraries and teacher education faculties. The option of extending the formatting options of the edna calendars to enable users to create their own print version of the calendars is also an issue under consideration.

5. Future Development

Additional work on vocabularies to describe education specific events is one area of interest for education.au; however, the major area of interest in future events metadata projects centres on relational or referencing issues such as those raised by Downes (2005). Using a conference as an example, there are numerous links with other metadata elements existing in edna already. There will be links to the organisation or institution sponsoring the conference, as well as to previous papers and publications of presenters and participants. Blog posts and related comments before, during and after the event may be of interest as are the published papers and photographs uploaded to sites like flickr. Downes also refers to location links and mapping to Google Earth, as well as the desirability of referencing agendas, podcasts, and PowerPoint presentations. Given the extensive metadata already available within the edna repository, and an increasing user base in online communities, there is potential to exploit these connections and concepts and to provide enriched events 'mashups' or services.

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