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Grey literature in Australian education

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Abstract

The prevalence of informal publishing or grey literature in education appears to have increased as digital technologies have become main-stream, educators have become more proficient and policies have moved increasingly towards supporting its use. In addition, the take up of social networking technologies and innovative methods of digital publishing have encouraged educators to produce, distribute and share content and commentary. Grey literature may make a substantial contribution to education even though issues such as credibility, access and a lack of standards can pose problems for producers and users. This paper begins by providing a context for the discussion of grey literature within the broader policy and education environment in Australia. An overview of grey literature as it appears in education in Australia introducing evidence of its usage, dissemination and application in Australian education then follows. Evidence about the access, dissemination and use of grey literature is drawn from an examination of the characteristics of a leading social networking and digital publishing service that was used by educators in schools, training institutes and teacher education faculties. This evidence is discussed in the context of influential national, state and institutional policies that address the use of digital technologies in education. As the take up of digital technologies in education increases, there is an expectation that the access to, dissemination of and use of digital publishing by and for educators will increase and have an impact on online professional learning and awareness of education research and practices.

Introduction

Education and training is one of Australia's largest enterprises employing hundreds of thousands of people and engaging millions of students. In schools alone, in 2011, there were 290,854 teachers and 3,541,809 students (ABS, 2011). In the main, education is funded by State Governments of which there are eight (six States and two Territories) and the national Australian Government.

The publication of most materials in education such as reports, policies, curriculum, research, guidelines, surveys, speeches and conference papers is undertaken by governments and educational agencies none of which have commercial publishing as a primary function. Although major policies and resources can be readily located during their time of implementation and prominent public discussion, some may fall into obscurity over time because they have not been commercially published and catalogued or preserved. One such example was a major national initiative called Education Network Australia (EdNA). EdNA and the resources developed during its lifetime will be discussed in some detail in this paper, in order to raise the issues associated with non-commercially published materials.

Non-commercially published resources and materials are often referred to as grey literature. Unlike commercially published materials, grey literature often does not go through a rigorous quality control and production cycle before being made available to its intended audience (Lawrence, 2012, p. 4). This raises a number of practical issues, especially for educators who seek evidence for supporting national projects of innovation, change and improvement.

This paper raises some of the issues associated with grey literature in within an educational context. EdNA is used as an example to demonstrate the impact of such information on education. Two possible solutions that seek to address issues about grey literature in education are then discussed suggesting ways that education might overcome some of the disadvantages of grey literature although issues associated with intellectual property are not canvassed. Finally, the paper advocates further actions for educators to maximise and build on the body of important knowledge published as grey literature in education.

Background

The Australian Research Council (ARC) is a national body that advises the Australian Government on research funding. Its focus is on research and innovation for the benefit of the community and globally (Australian Research Council, 2012). The ARC is responsible for the provision of significant research funding to Australian Universities.

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In 2011, Swinburne University of Technology, in collaboration with four industry partners and the University of Victoria, was successful in receiving funding for an ARC research grant to be conducted over three years. The research program titled *Grey literature, innovation and access to knowledge: realizing the value of informal publishing* began in late 2011.

The 'aims of the Grey Literature Strategies project are to:
* Define the role and value of grey literature and establish ways in which its impact and value can be evaluated and measured.
* Improve the way grey literature is produced and published in Australia in order to maximise its quality, impact and use.
* Improve access, retrieval and preservation of grey literature by collecting institutions, universities and other organisations.
* Build networks of collaboration across sectors active in producing and/or managing policy-oriented grey literature in order to build capacity for shared administration and technological development.' (Swinburne University, 2012).

The project will review the production, dissemination and collection of grey literature in Australia and develop best practice guidelines to maximize its benefits and use in public interest research (Swinburne University, 2012).

The partners who have joined with Swinburne University on this project include the National Library of Australia (http://www.nla.gov.au); the Eidos Institute (http://www.eidos.org.au/), a think-tank that focusses on the work-force, skills and productivity; the State library of Victoria (http://www.slv.vic.gov.au/) representing the National and State Libraries Australasia (http://www.nsla.org.au/) and the Australian Council for Educational Research (ACER) (http://acer.edu.au). ACER is heavily involved in the production and dissemination of grey literature in education and training, including through digital research projects such as the Digital Education Research Network (DERN) (http://dern2.acer.edu.au).

Grey literature definitions
There are many definitions of grey literature. The most commonly accepted definitions were originally agreed at the Luxembourg Grey Literature Conference in 1997 and then expanded at the New York conference in 2004. Grey literature was defined as a collective noun to mean, 'information produced on all levels of government, academia, business and industry in electronic and print formats not controlled by commercial publishing i.e. where publishing is the not the primary activity of the producing body' (Farace, 1978; Farace & Frantzen, 2005).

There are those who would describe grey literature as information that is obscure, poorly distributed, of mixed value, ephemeral, of low value, less traded, less monetised and used in limited ways (Whitehead, 2012). Grey literature can be undated, the author not known and the body taking responsibility for the document obscure. In other words, grey literature is seen by some as difficult, disorganised and variable in quality.

The work of education and training in Australia is led and informed by the national and state governments through policies, white papers, discussion papers, inquiries, investigations, evaluations and guidelines all of which is grey literature. As such it is an important body of literature and there is a need for it to be readily locatable, accessible and retrievable from an organised source that has the capacity to manage and preserve electronic resources. Currently, in Australia, this is not the case and grey literature is dispersed, restricted and can give the impression of being hidden from public access. Much grey literature is lost to the education sector due to the discontinuation of services and a lack of policies to ensure its survival.

Australian education
Australian education is organised into a hierarchy of three tiers: schooling, training and higher education. Schooling operates from Kindergarten to year 12, training is vocationally and technically focussed for post-compulsory education, and higher education concentrates on studies for degrees and research.

In the school tier, there are three sectors that are comprised of: the public or state school sector catering for 66% of school students; the Catholic sector which educates 20% of students and the independent school sector with 14% of students (Australian Government, 2011, p. 4). In the training tier the Australian states manage 64 Technical and Further Education (TAFE) institutions on multiple

campuses in parallel with over 400 Registered Training Organisations (RTOs). Australia has 39 universities, 38 of which are publicly funded.

Although the Australian states have a legislative mandate to manage education and training, the Australian Government provides the bulk of the funding from taxation for schooling in the three schooling sectors. Therefore, policies, research, strategies and priorities in education emanate from both the national and the state governments. These documents are usually stored electronically on websites and disseminated by notification, usually from government websites. They are then commented on in the news media, which monitors education and training, and also by bloggers and microbloggers (eg Twitter) involved in education. Therefore, finding, accessing, retrieval and use of documents about education produced by governments and research bodies constitutes an important body of knowledge for educational leaders, teacher educators and practicing teachers as well as researchers.

The proliferation of grey literature is underlined further by research that found that more archeological information is made available via grey literature than printed literature (Houghton, 2012). There is no reason to doubt that this situation is similar in education and training. As broadband is implemented throughout Australia, and particularly in services such as education and training, internet usage will increase. As the use of the internet increases so too will the production and use of blogs (Thomas, 2008) and other forms of grey literature publishing that will be at the forefront of information dissemination about educational change and innovation.

Educational innovation

National education policies, arrived at through cooperation between education Ministers and senior education officers of the national and state governments, drive educational innovation in Australia. Currently, national policy programs such as the supply of a computer to all year 9-12 students, the development of a national curriculum, the implementation of national teacher standards and teacher professional development, and the distribution of funds for special programs to improve equity for Aboriginal students, disabled students and students in poverty are central to educational improvement, innovation and change.

Each of the national programs mentioned above has produced a raft of documents from inquiries, policies, research, reports, speeches, guidelines, articles and scholarly papers. Researchers wishing to locate these documents need to be aware of the national priorities and where documents for these are stored. However, a number of issues associated with this tranche of documents become apparent in their production, dissemination and access. These issues can be seen more clearly by examining one such national project that has now been completed: EdNA[1].

EdNA was a national project that ran for fifteen years from 1995. It was managed by a national agency charged with the responsibility for its maintenance and development, and consulting with the national government and the state governments about its provision of services and strategic direction. The national consultative processes were undertaken through a range of collaborative electronic and physical means such as digital services, websites, blogs, group spaces, listservs, emails, video-conferencing meetings, distribution of papers and the like. Each of these processes produced a vast amount of important educational and technological literature as the project progressed.

The EdNA website in 2009 had a database of 43,368 items that had been evaluated against developed content guidelines and manually added metadata to improve the speed and accuracy of document locations. These items were aimed at supporting the use of digital content and services in education and training. There were three million additional linked resources accessible via a real-time federated search function of significant international databases of educational resources including research. EdNA also supported 35,349 educators engaged with collaborative professional groups and email distribution services. The production of knowledge was substantial by the users of these EdNA services. This knowledge included not only the policies, research and strategies related to the project and the many national high level groups that collaborated on the project but also advice from expert groups, international bodies and teacher support materials.

In 2010 the EdNA service was closed by senior education officials following a stakeholder review which did not take into account or consult with EdNA users. The EdNA users were the people who had engaged with and benefitted from the service. None of the aforementioned electronic resources and materials is officially available today and cannot be accessed. However, a subjective selection of resources including some research and reports were unofficially stored on Australia's electronic archive called Pandora[2]. In addition, the research, strategy, consultation and management documents

associated with the project and developed by the national technology agency responsible for the management of EdNA are also not available. All in all, the pioneering work of a large number of professional educators, educational leaders, researchers and experts has been lost to posterity, research and historical analysis.

The question that then emerges is, 'Why was this information lost?' In a small and limited enterprise losing information may be understandable. However, education and training in Australia is a very large enterprise that in 2011 consumed 7.1% (Australian Bureau of Statistics, 2012) of the national income; that is $94 billion. An innovative and ground breaking national project such as EdNA can have a lasting impact on future policy and innovation upon which education and training is advanced. Today, the national collaborative physical and online processes that were conceived and tested by EdNA are used in the development of the national curriculum. However, the EdNA resources and materials were lost because they were not archived and preserved. Instead, the EdNA online service was shut down and most of the grey literature information that was in electronic formats vanished.

The capacity to bring important information together into one accessible database or multiple databases connected in real-time, and to archive and preserve important information should be a central function of all online services that produce and disseminate important literature. The next two sections discuss ways in which grey literature can be harnessed to enable searching, accessing, retrieving, usage, archiving and preservation.

Integrators or grey literature curators

A number of online websites provide integration services within a specific field. An integration service can be a web service where a group of discipline experts aggregate and curate information in one place for access by interested users. An example of an integration service is the Digital Education Research Network (DERN) (http://dern2.acer.edu.au) managed by the ACER (http://www.acer.edu.au). DERN is a research service that concentrates on and specialises in the use of digital technologies in education for the purpose of improving learning. DERN provides a research news and review service that also facilitates access to research archives and a database of digital education research. It is focused on servicing teachers, educators, researchers, policy makers and digital education commentators.

Each week DERN distributes an email notifying users about research news and also a review of a significant research article, paper or report. Predominantly, the news and research reviews that are provided on DERN are about works that have been openly published and are freely accessible for viewing and often for downloading. News and research reviews of articles and papers available in commercially published journals are rarely cited on DERN because they are inaccessible to the general user. DERN is an aggregator and curator of grey literature in the field of learning using digital technologies and digital media.

Of note is the observation that it would appear that the bulk of research, scholarly papers, policy statements and strategic documents about the use of digital technologies in education and training are openly available and published as grey literature. Integration services such as DERN (http://dern2.acer.edu.au) support educators and educational researchers to locate, access, disseminate and use grey literature in the field of digital technology. Integrators such as DERN bring highly skilled expertise to concentrate on the provision of a service in a specific field of inquiry that removes many of the barriers inherent in grey literature. However, if web services that contain significant research that has been reviewed by DERN and linked to DERN is not preserved and archived then, it may also be lost to research and knowledge building.

A framework for harnessing grey literature

Another method for systematically harnessing grey literature in a specific field of research or scholarly endeavour was developed by Jessica Tyndall, Medical Librarian at the Flinders University in South Australia. Tyndall (2008) developed a framework in order to systematically collect and evaluate grey literature for use by students, researchers and scholars. Tyndall (2008) listed the types of grey literature that may be encountered by scholars and researchers, and then went on to propose that grey literature could 'be critically appraised for strength and validity using a simple approach … [by] marrying the concept of "expert opinion/insider knowledge" with the general principles used to evaluate web resources' (p. 5).

Tyndall (2008) identified the essential characteristics of grey literature and argued that the following criteria checklist 'has the flexibility to be applied to the widest range of resources: from models of primary healthcare to dissertations, maps, diaries, podcasts, blogs and so on' (p. 6). The criteria in the Tyndall checklist include:

- Authority,
- Accuracy,
- Coverage,
- Objectivity,
- Date, and
- Significance.

Tyndall (2008) abbreviated these grey literature characteristics as AACODS for brevity and as a memory aide. Each criterion is explained in some detail and the researcher is able to use them to evaluate resources from a grid of inquiry locations based on possible sources of information.

An example using Tyndall's (2008) framework to systemically build a search schema for a discipline can be seen in Table 1. In Table 1, the AACODS criteria have been listed in the centre with the types of possible information sources shown on the left and levels of search on the right. Each located item can then be evaluated by using Tyndall's criteria and sorted for sources and levels of information.

Tyndall AACODS framework			
Possible sources	**Criteria for each item**	**Levels**	
Govt policy/strategy reports	*Authority*	Open	Local
Blogs	*Accuracy*		Local
Projects	*Coverage*		National
Conferences	*Objectivity*		International
Newsletters	*Date*		International
Web services	*Significance*		International

Table 1: AACODS framework

A researcher can develop a schema for research by adapting the Tyndall (2008) AACODS framework for application in a specified field of inquiry. Although this framework is not exhaustive, it is sufficiently general to be applied to wide variety of disciplines and provides an excellent starting point for locating and evaluating grey literature in a specific discipline.

Conclusion

Grey literature as defined in this paper is being relentlessly produced by a range of government, businesses and research bodies. Education and training in Australia is a large and ever changing enterprise that is dependent on government funding. Change and innovation often occurs in education and training at the national level as a result of policy, strategy and funding shifts. The documentation produced by local, state and national education and training projects in the course of such shifts in policy and priorities is published by governments, national agencies and research institutions. Information about innovations also emerges from conferences, workshops, newsletters and blogs.

The increasing proportion of grey literature emanating from education and training innovations although important is obscure, difficult to locate and access, of mixed value and used in limited ways. However, major national projects have compounded these ephemeral characteristics of educational grey literature through a lack of attention to archiving and systemic preservation. Grey literature that is not archived contributes to the loss of an important body of material on which education could build and advance.

The importance of grey literature in education and training cannot be underestimated. As the take up of digital technologies in education escalates, there is an expectation that the access to, dissemination of and use of digital publishing by educators and for educators will increase and have an impact on online professional learning and awareness of education research and practices.

There are ways in which grey literature can be preserved which include access to expert integration online services such as DERN (http://dern2.acer.edu.au) where the searching, curation and aggregation are done for the user. A grey literature search framework is another way that can empower researchers to build a search schema for systematically locating, accessing, retrieving, using and applying open information in a specific scholarly discipline. The Tyndall (2008) AACOD grey literature framework is one such method for developing a schema for systematically researching and evaluating grey literature.

In order to maximise the use of grey literature in education and training, there is a need to systematically collect, store, archive and preserve important information as a body of knowledge for posterity, research and historical analysis. Further research is warranted into the role of grey literature in order to improve access, retrieval and preservation of important information produced as grey literature.

The Australian Council (ARC) Linkage Project 2012-2014 titled *Grey Literature Strategies: Enhancing the value of informally published research and information* led by Swinburne University in collaboration with five partners which includes the Australian Council for Educational Research (ACER) (http://www.acer.edu.au) is one such grey literature research effort. Progress on the research project can be seen at http://greylitstrategies.info/.

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[1] A snapshot of a number of top-level layers of EdNA can be seen at http://apps-new.edna.edu.au/edna_retired/edna/go.html
[2] Pandora can be accessed at: http://pandora.nla.gov.au/