

**Using social software to gather evidence,
two case studies in education for sustainability:
CarbonKids 2009 Pilot and Global Communities for Sustainability**

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Abstract

In this paper we focus on the usefulness of social software tools in evaluation evidence gathering. This technology is now truly ubiquitous and can enable evaluators to easily and efficiently capture data. In this space, with the tools now available to us, the role of the evaluator expands to include skills in creating the digital context so that respondents can tell their stories, capture their own data and get speedy feedback. Additional value can be added by allowing all program participants to view one another's stories. Two case studies, drawn from current evaluation projects in education for sustainability initiatives, are used to show how this is working. For the purposes of this conference, the focus is on evidence gathering and analysis.

1. Setting the scene: An introduction & some definitions

1.1 Introduction

In 2007, I presented a Roundtable session at the Melbourne AES Annual Conference, **Web 2.0 / Social Software – What is it and what are the implications for Evaluation theory and practice?** This paper is a continuation of that theme and shows how I have applied the technologies to evidence capture.

My current evaluation projects relate to a body of work, begun in 2000, in Education for Sustainability (EfS). Two current projects that make use of social software are **CarbonKids (CK)** and **Global Communities for Sustainability (GCS)**. I am joined today by Angela Colliver and Prithi Nambiar who represent these programs and whose organisations have engaged me as their evaluator. Both programs are linked with the Australian Sustainable Schools Initiative (AuSSI) – a framework for schools undertaking EfS as part of Australia's commitment to the UN Decade of Education for Sustainable Development.

Both **CK** and **GCS** incorporate an Evaluation Strategy that includes use of social software / Web 2.0 tools so that each school-based team captures its baseline data, action plan, learning journey, and outcomes. Social software tools used include wikis, web forums, online conferencing focus groups, online surveys (pre and post), digital photostories, video-blogging.

This presentation will describe how evidence has been gathered to answer the key evaluation questions. We will also touch on implications for the conduct of the evaluations.

1.2 Some Definitions

Social Software / Web 2.0

Definitions of social software generally emphasise online technologies (or 'tools') that enable collaboration, networking, distributed knowledge management, and the promotion of flexible individual and collective knowledge construction. There is an ethos of fluidity

and community that develops through these open and socially shared information spaces.¹

Who is using social software? Apart from Barak Obama, Kevin Rudd, many other celebrities, colleagues and my 20 year-old niece, I have architect friends who are currently working in the United Arab Emirates in Abu Dhabi where the Sheikh was recently considering shortening the school holidays during Ramadan so that they ended half-way through the month and before the Eid celebration. Through his Facebook site, he asked his Emirati population what they thought of this idea. After receiving many negative postings he decided against re-opening schools before the end of Ramadan.

UN Decade of Education for Sustainable Development (DESD)

The goal of the United Nations Decade of Education for Sustainable Development (2005-2014, DESD), for which UNESCO is the lead agency, is to integrate the principles, values, and practices of sustainable development into all aspects of education and learning. It aims to encourage behavioural change towards a more sustainable future in terms of environmental integrity, economic viability, and a just society for present and future generations.²

Education for Sustainability

In April this year, the Australian Government published its National Action Plan for Education for Sustainability, *Living Sustainably*. The plan aims to, *equip all Australians with the knowledge and skills required to live sustainably*. It is Australia's contribution to the DESD.³

There are a range of definitions of education for sustainability (EfS). Here is one version used by Josephine Lang (2007), *EfS is a big idea that tries to rethink the way we learn, live and work together while respecting the capacity of the Earth's natural systems to support life*.⁴

Australian Sustainable Schools Initiative (AuSSI)

The Australian Sustainable Schools Initiative (AuSSI) is a partnership of the Australian Government, and the States and Territories that seeks to support schools and their communities to become sustainable.

The AuSSI involves participants in a whole-of-school approach, to explore through real-life learning experiences, improvements in a school's management of resources and facilities including energy, waste, water, biodiversity, landscape design, products and

¹ See O'Reilly, Tim (September 2005), *What is Web 2.0* <http://oreilly.com/web2/archive/what-is-web-20.html> and, Evans, Val with Larri, Lorraine (2006) *Networks, connections and community [electronic resource] : learning with social software* http://www.flexiblelearning.net.au/flx/webdav/site/flxsite/users/cpickles/public/Final_Report_Social_Software_for_Learning17April.pdf

² See UN Decade of Education for Sustainable Development (2005 – 2014) website http://portal.unesco.org/education/en/ev.php-URL_ID=27234&URL_DO=DO_TOPIC&URL_SECTION=201.html

³ See Australian Government, Department of the Environment, Water, Heritage and the Arts (2009) *Living Sustainably: the Australian Government's National Action Plan for Education for Sustainability* <http://www.environment.gov.au/education/publications/pubs/national-action-plan.pdf>

⁴ Lang, Josephine (2007) *How to succeed with Education for Sustainability*, Curriculum Corporation, Australia

materials. It also addresses associated social and financial issues. The Initiative's vision is for all Australian schools and their communities to be sustainable.⁵

CarbonKids

The **CarbonKids Pilot** program (**CK**) is a cooperative venture between schools, CSIRO, Shell, the AuSSI, and the community. It aims to pioneer the latest science and sustainability education to actively involve schools to integrate teaching and learning about climate change. This year, 26 schools (in WA, NSW and the ACT) are piloting the program in carbon footprint reduction, environmental protection and conservation, and local area enhancement by learning about climate change, biosequestration, and practical actions (including tree growing and planting). Next year, the program plans to expand to over 200 schools.

Global Communities for Sustainability (CGS)

Global Communities for Sustainability (GCS) is an intercultural Sustainability Development Initiative and Exchange program between Indian and Australian high schools. It is coordinated by the Centre for Environment Education Australia and linked with the AuSSI. GCS was piloted in 2007 with 12 schools in Gujarat and NSW teaming up online. This year it is expanding to 12 Australian and 18 Indian schools across more jurisdictions in both countries (five states in Australia and four states in India). It targets middle years High School students and teachers to undertake a team project to address local sustainability issues and share their process through online communication with a partner school in the other country. In this way school teams critically reflect on their own projects and their partner school projects. The aims are to:

- facilitate learning in EfS across countries and cultures;
- build a model for practical sustainability education and action for youth;
- create an engine for sustainability action and leadership at the local and global level; and
- foster good citizenship at the local, national and global levels.

2. How evidence has been gathered and its use in answering the key evaluation questions.

Broadly, the evaluations of both CK and GCS look at the impact of doing the programs on teachers, students, and the school community (including parents and families) in terms of:

- Improvements in teaching and learning for sustainability; and
- behavioural changes towards more sustainable practices.

When schools participate in GCS they agree to form a school team that then follows the *GCS Learning Journey Steps*. These are:

- Mapping a local area
- Listing Sustainability Issues
- Community Survey
- Developing a Strategy or Action Plan

⁵ See <http://www.environment.gov.au/education/aussi/about.html>

- Bringing the Community Onside
- Implementation
- Final Project Report

The *GCS Steps* provide a sequence of tasks considered to be good practice in undertaking a sustainable development project. Local teams include a teacher, students and a representative from the local council or community. They research local sustainability issues and learn more deeply about managing these through connecting with a team in the other country and understanding similar issues in a global context.

The process is supported by regional mentors and is both guided and documented online at the GCS website. Teams post their information about their schools and their proposed project, action plans, findings from each step, fortnightly progress reports and participate in web forum threads. Individuals between partner schools are also likely to develop relationships by email.

In a similar way to GCS, the CK schools commit to a process that includes the following steps:

- Forming a CarbonKids Leadership Team
- Participating in the introductory CarbonKids Professional Learning Session delivered by the CarbonKids Coordinator
- Planning the integration of teaching and learning about climate change and its relevance to living sustainably in years K-9, using features of quality Science related teaching and learning
- Implementing teaching and learning in locally relevant ways including:
 - measuring and managing the school's greenhouse gas emissions
 - identifying ways to avoid emissions or increase efficiency for unavoidable emissions
 - increasing sequestration by planting trees and shrubs that also help maintain biodiversity
 - making sustainable transport choices
 - protecting biodiversity, improve school grounds and surrounding areas to promote natural absorption of carbon (biosequestration)
 - educating their local community
- Documenting the learning journey, and reporting changes in curriculum integration, adoption of quality Science related teaching and learning, reduction in greenhouse gas emissions and carbon footprints, behavioural changes towards sustainable practices.

Table 1 following summarises the various social software tools and how they are being used to provide data for both the evaluator and program participants. It is important to note that in GCS social software was already part of the way the program functions. It is used by teams to approach a range of sustainability themes and interrelationships across cultural dimensions. For CK, in its pilot phase, social software was proposed by the evaluator and its use may go beyond the purposes of the evaluation.

Table 1: Social software tools and their use in the CarbonKids and Global Communities for Sustainability Evaluations

Social software tool	Use in Evaluations	
	CarbonKids	Global Communities for Sustainability
<p>Online surveys <i>Aggregated results are emailed to school groups for their use, and posted on the wiki / web for general program information. Participants are able to use this information for team development and to reflect on their achievements.</i></p>	<p>Entry point (baseline) and On Completion</p> <ul style="list-style-type: none"> ▪ Teachers: n = 52 (i.e. 26 x average 2 teachers per school, possibly more) ▪ Students: n = 780 (26 x 30 i.e one class group) ▪ Parents / Community reps: n = 52 (i.e. 2 per school) ▪ Principals / School Executive rep: n = 26 	<p>Entry point (baseline) and On Completion</p> <ul style="list-style-type: none"> ▪ Team members: n = 360 (30 teams x average 12 per team) <p>On Completion (being considered)</p> <ul style="list-style-type: none"> ▪ Mentors from India & Australia who supported the projects
<p>Web forum</p>	<p>n/a <i>the wiki has potential to connect schools, and this may happen, but at this stage is not part of the Pilot evaluation plan.</i></p>	<p>Content analysis of web forum postings to determine the degree to which:</p> <ul style="list-style-type: none"> ▪ team members are collaborating and critically reflecting on their Sustainable Development projects ▪ developing cross-cultural awareness
<p>Wiki / Website uploading <i>Students and teachers expand their ICT skills and are able to see other school group reports. In GCS, this is essential to cross-cultural inter-school collaboration. With CK it has this potential and may become a pot-pilot feature.</i></p>	<p>Student School Project digital stories content analysis</p> <ul style="list-style-type: none"> ▪ n = 26 at least one report from each school, but there may be a number of team or class reports, depending on each school's approach. 	<p>Review of Team posts to see the use and frequency of the space in relation to:</p> <ul style="list-style-type: none"> ▪ school information ▪ project proposal ▪ action plans ▪ findings from each step ▪ fortnightly progress reports ▪ final reports
<p>Online conferencing <i>Enables a focus group to be conducted with participants</i></p>	<p>Focus group</p> <ul style="list-style-type: none"> ▪ Purposive sample of Teachers from participating schools (e.g. location / class year level / metro / regional rural etc) n = 12 	<p>Focus Group (being considered)</p> <ul style="list-style-type: none"> ▪ Purposive sample of Teachers from participating schools (e.g. country / nature of project / school type or sector etc) n = 10

Social software tool	Use in Evaluations	
	CarbonKids	Global Communities for Sustainability
<i>anywhere in the world.</i>		
Traditional Evaluation tool		
Phone interviews <i>Whilst this is 'traditional' tool it is now possible to use an online tool such as Skype.</i>	Key stakeholder & local community reps <ul style="list-style-type: none"> Purposive sample of community reps. n = up to 15 across WA, NSW, ACT & Australian Government 	Key stakeholder & local community reps (being considered) <ul style="list-style-type: none"> Purposive sample of community reps. n = up to 15 across WA, NSW, ACT & Australian Government

3. The benefits of using Social Software in evaluation, some considerations and risks

Following are some of the reasons why using social software is of benefit to the CK and GCS evaluations:

- The nature of EfS programs: Social connectedness is at the heart of sustainability. The evaluation process dovetails with the existing program processes and contributes to knowledge sharing, a community of practice, and social connections. The technologies being used have the dual ability to gather evidence and enhance networking across Australia and support cross-cultural, intergenerational, collaborative dialogue. Using online technologies is arguably more environmentally responsible than travelling across Australia to conduct case studies and interviews.
- Data quality:
 - Quantitative and qualitative survey data: online survey tools enable greater efficiency in survey design, delivery, data recording and analysis. They reduce data entry because it is done by the respondent. Response rates are often higher for online surveys. It is likely that greater detail is provided in open-ended questions. These tools are now sufficiently sophisticated to provide features such as cross-tabs, filters, automatic chart generation, downloading data in a range of formats (e.g. PDF reports, Excel, XML).
 - Using wikis (or web forums) qualitative data is provided directly by the participants. It functions both as data and as online content.
- Engaging school systems in agreeing to teachers and students participate in the evaluation: Information and communication technology (ICT) skills of participants are increased and this is attractive to schools that are looking for appropriate real life opportunities for students and teachers.
- Involving the participants in the evaluation process: Whilst participants have not contributed to the formulation of the evaluation questions or methodology, they are involved in using the aggregated data of their baseline surveys which will be fed back to individual schools and for all schools. They will also be able to see the 'on completion' aggregated data. There is potential on the wiki and web forum to seek feedback and critical reflection comment about the evaluation. The evaluator is able to post notices and comments. It will be interesting to see whether participants use this facility.

- Value for money: With limited budgets, the technology provides excellent affordability, reliability and ease of use.

These are some considerations that the evaluator is faced with when using social software in the conduct of the evaluations:

- Respondent capabilities and access to computers: Using these technologies means that you need to consider the range of abilities of your respondent's digital literacy, their level of comfort with responding to online surveys, and providing wiki or web forum reports (i.e. writing, managing, publishing activities and ability to interact collaboratively with others). In the CK evaluation each school group will be asked to construct a digital story in a structured format that traces their journey. They will need to learn the wiki environment and how to add text, upload images, and possibly also videos. In GCS, student teams are able to post digital photos, PowerPoint presentations, Word Documents. Posting comments on web forum threads can be confusing for those unfamiliar with this convention. The GCS students slowly learn how to move from exchanging information about their projects to being able to be collaborative.
- Ethical conduct: As is any evaluation privacy, confidentiality, and informed consent are essential. Added to these are a 'netiquette' code of conduct, and copyright (e.g. of images).
- Evaluator capabilities in facilitating and managing online content: Using tools such as wikis and online conferencing to conduct a focus group requires confidence with and experience of the technology. As in face-to-face focus groups, it is important for the evaluator to work with a support person, not as a note-taker (because the comments are automatically recorded) but as an experienced online facilitator who focuses on the technology issues of bringing people in when needed. Similarly, managing a wiki space involves some knowledge of website development and management.

4. Other ways evaluators are using social software and implications for the greater use

As yet, there is very little available documentation about the use of social software in evaluation. I know that some evaluation consultancies are using wikis for collaboration within the evaluation team and with their clients. This last section of the paper is a lead-in to opening up discussion from session attendees. We'd like to grow some knowledge of current practice, here are some questions ...

What are your experiences with social software tools in the conduct of evaluations? How do they compare with what you've heard so far?

What do you think are the implications of using social software in evaluations for the role of the evaluator, data quality, and efficiency of data collection.

What challenges do you see for evaluation?

What other questions do you have that you feel we should be considering?