IFLA Publications 161

THE GREEN LIBRARY

The challenge of environmental sustainability

DIE GRÜNE BIBLIOTHEK

Ökologische Nachhaltigkeit in der Praxis

Edited on behalf of IFLA by
Petra Hauke, Karen Latimer and Klaus Ulrich Werner

Beth Filar Williams and Annabelle Koester

No money, no travel, no problem
Sustainability through virtual – not only library – services and collaborations

DE GRUYTER
SAUR

Beth Filar Williams and Annabelle Koester

No money, no travel, no problem

Sustainability through virtual – not only library – services and collaborations

Abstract: Sustainability is often described as a healthy balance between the environment, economy and equality. Online learning can promote the three tiered concepts of sustainability through opening up opportunities for more people globally to connect without the need for a lot of money or ecological resources to travel. This article discusses the idea of sustainable library services and opportunities through the virtual world. The two authors also present a case study of their online-only virtual internship experiences to demonstrate firsthand the application of these ideas.

Zusammenfassung: Nachhaltigkeit wird oft als ein gesundes Gleichgewicht zwischen Umwelt, Wirtschaft und Gleichstellung beschrieben. Online Learning kann diese drei verbundenen Konzepte der Nachhaltigkeit fördern. Hierdurch eröffnen sich neue Möglichkeiten für mehr Menschen, sich global miteinander zu vernetzen, ohne Einsatz von Geld oder ökologischen Ressourcen für Reisen. Der Beitrag diskutiert die Idee von nachhaltigen Bibliotheksservices und Möglichkeiten, die sich durch die virtuelle Welt ergeben. Die beiden Autorinnen präsentieren außerdem ihre Erfahrung eines rein virtuellen Praktikums, um die praktische Anwendung dieser Ideen zu verdeutlichen.

Beth Filar Williams: University of North Carolina, Greensboro, NC, USA, Mail: efwilli3@uncg.edu
Annabelle Koester: DILL Master Programme, Oslo, Finland, Mail: annabelle.koester@web.de

1 Introduction

Sustainability can be defined in many ways but at its core seeks a healthier balance of the environment, economy and equality. Educating people in why and how to create a more sustainable world helps us reach these goals. E-learning, online learning, distance education or anything done in the cloud or virtual environment can be touted as being “green” naturally, with less travel needed. Online learning can promote the three tiered concepts of sustainability through opening

up opportunities for more people globally to connect without the need for a lot of money to travel. This article will discuss the idea of sustainable library services and opportunities through the virtual world. The two authors also present a case study of their online-only virtual DILL (Digital Library Learning Master Programme) internship experiences to demonstrate firsthand the application of these ideas.

2 Challenges

Libraries and librarians consume a lot of energy and waste a lot of paper simply to exist. From supporting the physical building – supplying comfort to our users, often 24/7, and preservation of resources – to powering the networked computing technologies needed to host growing electronic resources and services. Even with the ever-increasing availability of these e-resources, global paper use has increased "more than six-fold over the latter half of the 20th century, and has doubled since the mid-1970s" (Tilford 2004). Considering the advent of more energy-efficient computers, devices, and servers and better adoption of energy-saving methods such as putting computers in sleep mode after 15 minutes of inactivity, going virtual is more sustainable. Electronic resources hosted anywhere are accessible by more people than a single book or a print article can be, hence making them more sustainable than print. Accessing e-resources through more energy-efficient devices can also bestow energy and environmental savings (Bluejay 2012). Many librarians themselves add to the waste cycle especially by travelling to conferences and meetings – an important part of learning, connecting and collaborating. Not only is the act of travelling a high cost to the environment but it is also a high-budget item – especially with air travel – for many libraries. And don't forget the "un-green" swag often grabbed at these events or freebies touted as "green" products which are often just a marketing ploy (Hudson 2012). There are options to cut back on this waste and shift to the many free, open-source, virtual communication and service options available.

3 RRRs in online learning

Reduce, re-use, recycle are often seen as the key practical steps in environmental stewardship. These sustainable concepts can all be applied to online instruction (Steiner 2012). Finding ways to reduce time spent on instruction and making it more scalable benefits both the learner and the creator. Time spent creating e-

learning materials that can be used in online-only classes, blended classes or flipped classrooms, or embedded in libguides or library management systems reduces time spent working with each individual or every class in a face-to-face environment. Engaging synchronously and asynchronously online allows for the reduction of travel by all parties. With added pressure on library funding, librarians are seeking free or low cost tools. Creating tutorials and other e-learning objectives using free or low-cost software such as Jing[1] and Screencast-o-matic[2] reduce spending. These tools also host your videos, as can YouTube,[3] for no charge. For synchronous instruction there are free web conferencing tools like Big Blue Button,[4] but you might have tools available on your academic campus beyond the library. For larger institutions that have solid IT departments, reduction in energy can be found through server virtualization. Server virtualization saves money in both reducing the need to buy more equipment as well as energy costs. Most servers are not being used fully nor being used constantly. Using server virtualization software, one physical server box can host multiple "servers" by dividing it into multiple environments, and hiding or masking these other resources from the user, and getting the most of the machine's space, energy and resources and possibly saving up to 80%.[5]

The concept of "re-use" ties in with many of the reducing concepts. Creating your content to be adaptable and reusable not only reduces your time but that of others in your institution and beyond. Librarians often share content with each other, and there are also content repositories like ANTS,[6] PRIMO[7] and MERLOT.[8] Creative-commons-licensed materials are available and state their specifications for sharing. From YouTube to Flickr,[9] look for creative commons filters or options to find resources you can re-use. Many libraries explicitly offer their tutorials with creative common licenses allowing sharing and re-use through their websites and on YouTube.[10]

The last R – recycle – not only falls under the "re-use" of others' tutorials but recycling content into your own. Many librarians are willing to share ideas, scripts or even pieces of their own creation to be mashed up for your own needs.

1 www.techsmith.com/download/jing/. Accessed on 7 February 2013.
2 www.screencast-o-matic.com/. Accessed on 7 February 2013.
3 www.youtube.com. Accessed on 7 February 2013.
4 www.bigbluebutton.org. Accessed on 7 February 2013.
5 www.vmware.com/solutions/green-it. Accessed on 6 February 2013.
6 http://ants.wetpaint.com/. Accessed on 6 February 2013.
7 www.ala.org/CFApps/Primo/public/search.cfm. Accessed on 6 February 2013.
8 www.merlot.org/merlot/index.htm. Accessed on 6 February 2013.
9 www.flickr.com/. Accessed on 7 February 2013.
10 www.lib.ncsu.edu/tutorials/pr/. Accessed on 6 February 2013.

Ask a librarian to borrow a transcript from a video tutorial already created, saving a step in the process and recycle what already exists. Check out the University of Arizona library's *Guide on the Side*[11] and the University of California Libraries' *Begin Research Tutorial*[12] both of which offer their code for recycling into your own tutorial. In designing e-learning instructional objects, consider adaptability to recycle the content and re-use it for other purposes. Develop small chunks of content and strategize how to update, adapt and tweak as things change or as needed for other purposes (Steiner 2012). Creating sustainable, scalable resources and services saves time and energy that can be used toward more intensive collaborations. Online learning is sustainable by its very nature by saving time, reducing waste and energy, use, saving money, and allowing for more equitable opportunities on a global scale.

3.1 Virtual workforce

The virtual workforce is growing strong, with small businesses hiring up to 50% of their workers now as virtual workers, according to an *Elance Survey*.[13] More high-speed internet globally, low cost devices, and free or open source technologies allow for more effective virtual connections. A recent study *WORKshift Canada: The bottom line on telework* (Lister & Hamish 2011) demonstrates the benefits of telecommuting to an institution. The company can save $10,000 a year for each two-day-a-week telecommuter, indirectly seen by increased productivity, reduction of overhead/real-estate costs and lower absenteeism and turnover (Lister & Hamish 2011, 7). Higher education must strive to create prepared students for the future workforce. With businesses shifting to a more virtual environment, those working in higher education and the students we serve need opportunities to experience a virtual work environment.

In libraries, a shift from thinking of library as place to library spaces – virtual and physical – is beginning to happen. "Virtual spaces are more open to networking than physical places" (Jankowska & Marcum 2010, 166). The ability to connect with people globally – without travelling – opens a world of cross pollination of ideas and collaborations.

11 http://code.library.arizona.edu/gots/. Accessed on 7 February 2013.

12 www.lib.uci.edu/licenses/license-uclibs-begin-research-tutorial.html. Accessed on 7 February 2013.

13 www.elance.com/q/blog/2011/09/online-hiring-trends-2011.html. Accessed on 7 February 2013.

3.2 Virtual internships

An enlightening article by Patricia Franks and Gillian C. Oliver (2012) dives into this idea as the authors discuss social learning theories and virtual internships as a method to bridge the distance between academia and the workforce. Social learning theory says people learn from one another (Bandura 1977), connecting the ideas of both behaviourist and cognitive learning theorists (Franks & Oliver 2012). The idea behind any internship is to allow a student a chance to apply theory in the practical working world. Adding the virtual component allows the student more opportunities for applying theoretical knowledge by working with many more professionals globally and to gain skills in the virtual working world environment. Those living in rural areas, lacking funds to travel, or those with families and full-time jobs, often are limited in their internship opportunities. Virtual collaboration offers more opportunities for more people, hence meeting the true definition of sustainability which includes social equity along with economic growth and environmental protection.[14]

3.3 DILL & virtual internships

The Erasmus Mundus master programme DILL[15] is a two-year full-time study programme. It educates information professionals in the topic area of digital libraries. The programme takes place in three different locations: Oslo (Norway), Tallinn (Estonia), and Parma (Italy). The students spend at least one semester at each institution and decide where they want to return for writing their master's thesis. After finishing the programme the students get a shared degree from the participating institutions. Additionally, it is possible to attend the programme virtually with two weeks of physical attendance.

At the end of the third semester in Italy, a four-week full-time internship is required. For two years students have had the opportunity to fulfil the internship virtually. This has allowed for new global opportunities and cooperation that were not possible before. These types of internship offer the student and his/her mentor/mentee a new way to collaborate, but also presents new obstacles. While the day-to-day routine of an intern and mentor are easy to manage in a single time zone, a big time difference makes it harder to integrate synchronous meetings into the day. This also affects asynchronous communication in terms of when

14 http://en.wikipedia.org/wiki/Brundtland_Commission#Sustainability_Efforts. Accessed on 7 February 2013.

15 http://dill.hioa.no. Accessed on 7 February 2013.

an answer or update can be expected from the other side. If the two collaborators prefer different forms of communication, this must be decided upfront.

Regardless of these challenges, international virtual internships offer a new way to get in touch with someone from another culture. The intern and the mentor can learn more about life and work in the other country while they are collaborating and learning. Dealing with differences demands tolerance and openness. In addition to the cultural aspect, there are inevitable language problems. If both parties are open and willing to strive to be successful, these issues can be overcome and approached as a positive learning experience. These experiences never before imagined can be developed, allowing both intern or mentor more equitable – and sustainable – opportunities on a global, cultural scale.

4 Tech tools for virtual collaboration

The tools named in the following part illustrate the possibilities for virtual collaboration, but can only be taken as examples as there is a much wider range available.

4.1 Synchronous communication

For simple chat and video chat with not more than two persons Skype[16] and Google Talk[17] are free and common tools. If more people are involved and/or screen sharing is needed, join.me[18] is a good option; Google+ Hangouts[19] or ooVoo[20] add the video component. For more advanced settings in a virtual classroom style many institutions buy licenses to Adobe Connect,[21] Blackboard Collaborate,[22] WebX[23] or a similar tool for their affiliates. There are open source options as well such as Vyew,[24] AnyMeeting[25] or Big Blue Button[26] that easily allow larger meetings to be organized.

16 www.skype.com. Accessed on 7 February 2013.
17 www.google.com/talk/. Accessed on 7 February 2013.
18 https://join.me/. Accessed on 7 February 2013.
19 https://tools.google.com/dlpage/hangoutplugin. Accessed on 7 February 2013.
20 www.oovoo.com. Accessed on 7 February 2013.
21 www.adobe.com/products/adobeconnect.html. Accessed on 7 February 2013.
22 www.blackboard.com. Accessed on 7 February 2013.
23 www.webex.de/. Accessed on 7 February 2013.
24 http://vyew.com. Accessed on 7 February 2013.
25 www.anymeeting.com. Accessed on 7 February 2013.
26 www.bigbluebutton.org/. Accessed on 7 February 2013.

Additionally, these tools make it possible to share ideas on a virtual whiteboard, take polls and record the session.

4.2 Asynchronous communication

Email provides an easy exchange for asynchronous communication. Dropbox,[27] Google Drive[28] and other free tools for file sharing offer the possibility to share files on a virtual drive. As these usually only give the option to exchange uncoded file content, BoxCryptor[29] or a similar tool is useful. This free software allows users to encrypt files for the transfer from one computer to another. Often quick screencasts or screenshots are needed to explain a "how to". This need is especially important when collaborating completely virtually, in order to show a process or take a screenshot of an issue to share with one another. Tools mentioned earlier like Jing, Screencast-O-Matic or Screenr[30] offer alternative free options. Discover other options on the UNCG Libraries Toolkit.[31] Many free tools often come and go, so these specific tools mentioned may disappear but others will take their place.

5 Conclusion

Through existing virtual tools and infrastructures, global and far reaching collaborative opportunities abound. Connecting virtually allows those without the means for travelling chances to grow and learn while reducing the environmental impact at the same time. Additionally, offering more opportunities to more people improves the social equality for those who do not have these advantages through local institutions. Working with a mentor or mentee of a different cultural and national background expands one's understanding and tolerance of differences. The environmental concerns about the electricity generated to run these virtual tools – such as in the (author's) state of North Carolina where coal is still a key energy source – can be mitigated through tools and methods such as server virtualization or using energy-efficient devices. Free or open-source versions of the tools are often available and can be combined with software and hardware offered by libraries to create a more sustainable environment. Those without a per-

27 www.dropbox.com/. Accessed on 7 February 2013.
28 http://drive.google.com/. Accessed on 7 February 2013.
29 www.boxcryptor.com/. Accessed on 7 February 2013.
30 www.screenr.com. Accessed on 7 February 2013.
31 http://uncg.libguides.com/toolkit. Accessed on 7 February 2013.

sonal computer or internet access can often turn to their local public or academic library. Virtual connections between people can also transform into personal relationships for those who are willing to try and reach out. The authors hope others will consider the infinite global, sustainable opportunities and collaborations when jumping into the virtual world.

References

Bandura, A. (1977). *Self-efficacy: the exercise of control*. New York, NY: Freeman.

Bluejay, M. (2012). "How much electricity do computers use? Saving Electricity". http://michaelbluejay.com/electricity/computers.html. Accessed on 7 February 2013.

Franks, P. & G.C. Oliver. (2012). "Experiential learning and international collaboration opportunities: Virtual internships." *Library review* 61(4): 272–285.

Hudson, D. (2012). "Beyond swag". In *Greening libraries*, edited by M. Antonelli & M. McCullough, 193–204. Los Angeles, CA: Library Juice Press.

Jankowska, M. & J.W. Marcum. (2010). "Sustainability challenge for academic libraries: Planning for the future." *College and research library news* 71(2): 160–170. http://crl.acrl.org/content/71/2/160.full.pdf+html. Accessed on 7 February 2013.

Lister, K. & T. Hamish. (2011). *WORKshift Canada: the bottom line on telework*. San Diego, CA: Telework Research Network. http://phoenixnetworks.netfirms.com/Telework_Canada_Final.pdf. Accessed on 7 February 2013.

Steiner, H. (2012). "Reduce, reuse, recycle: Cost-effective and sustainable online library construction." Poster session presented at the ACRL/NY Annual Symposium. http://acrlnysymp2012.wordpress.com/posters/. Accessed on 6 February 2013.

Tilford, D. (2004). "Paper." Worldwatch Institute. www.worldwatch.org/system/files/Paper.pdf. Accessed on 6 February 2013.

Williams, B. F., I. Rakhmatullaev & E. Corradini. (2013). "From Uzbekistan to the US: Short Chronicle of a virtual internship experience." *IFLA SET bulletin* 14(1): 9–12. www.ifla.org/files/assets/set/Bulletin/_SET_Bulletin2013-1-r3.pdf. Accessed on 18 February 2013.