

Creation and Use of Online Gateway for School Libraries from Free Web 2.0 Tools

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Abstract

The school library is challenged to remain relevant in the 21st century learning environment. With young learners always consulting Google and other free search engines for subject assignment and other information needs and with the underwhelming quality of much web-based information, the school library must find an interesting and effective way to deliver authoritative and relevant information services through online tools. However, effective information services online are most often hosted from subscribed or paid Web 2.0 sites. These online services are capable of interactivity among learners and flexibility for individual schools' administrative concerns. However, the ability to afford these services is frequently beyond the financial capability of schools from developing countries. The researcher explored the possibility of creating a school library website that serves as a pathfinder to online resources and electronically delivers other library-based school services using free Web 2.0 tools.

Keywords: library website, online gateway, online resources, using Web 2.0

Introduction

School children in the 21st century are very much exposed to internet and its resources. They fulfill a lot of school-related assignments and work using online tools. For example, they communicate with their teachers and peers about their daily lessons through emails and instant messaging. Students use Google search engine to generate a list of links to websites related to their subject assignment or question, they use Wikipedia for reviewing related content, and they look for videos from Youtube to watch demonstrations for school projects or listen to task-related instructions. All these learning tasks done online are important in the students' development of life skills particularly in the areas of self-direction and productivity. However, according to Herring (2011), more often than not, these freely accessible information sources online are beset with issues like the (1) absence of guidelines because anyone may post any kind of information on the web; (2) absence or minimum level of monitoring or reviewing and editing of posted material; (3) possibility of biased information from people with hidden agendas or commercial interest. Given this situation, students' life skills are put at risk of failure.

In this context, it is necessary that the school library actively places itself to monitor the students' access to and use of internet-based information. Johnson, Trabelsi, and Tin (2004) recommended that the library's gatekeeping function must shift from controlling and managing people's information access to screening information that is made accessible to its users and clients. The library must keep the users away from unreliable sources of information and direct them to retrieve from reliable ones. This is called web gatekeeping. According to Rao and Babu (2001), web gatekeeping may take on the tasks of information

sifting, wherein the librarian may make sense of and order web resources; access facilitating, wherein the librarian may provide hardware and software to access different information formats in the web; knowledge management, wherein the librarian may facilitate the productive use and sharing of knowledge resources; and web building, wherein the librarian may create and develop a library website and automate library services. This study theorizes that with the availability of free cloud-computing services, the library may easily perform these tasks through creating an online library gateway.

Theories and related concepts

Web gatekeeping is a challenge for any school library to perform not only because content is produced and posted to the web at a phenomenal rate but also because high quality online resources can demand a substantial portion of the library budget. With meagre financial resources, especially in developing countries, one of the most practical and effective ways for the school library to do is by building this web assistance and presence using free online tools available through cloud-computing services. While these services may have variations and differences from paid or subscription websites, overall, their main features and functions may be similar. Discussion of the school library website, online information sources and survey of online tools follow.

School Library Website

There is little research published that describes the content of a good school library website. But as Jurkowsi (2004) mentioned in the paper 'School Library Website Components', what is essential is to consider the unique teaching and learning needs of the users that are supported by the school library. In her study, Simpson (2003) identified interactivity and links to online resources as essential elements of a school library website. For interactivity, the school library website needed to indicate email addresses and a contact number to offer users a way to communicate their concerns. The school library website should also offer links to online catalogs, selected databases, and internet search engines. In the survey by Hunsinger (2005), the following features for an effective school library website were identified: basic information about the library and its staff; reading encouragement, like book reviews and new acquisitions; information literacy tools, like links to research databases and research guides; curriculum support, like class specific resources, age-appropriate design and navigation features; and miscellaneous files, like parents' resources, links to government agencies and other libraries.

Online Information Sources

Government offices, news agencies, NGOs, and private institutions have established and maintained web presence in order to make their information, mission, and services available for access to a wider group of people. Subject experts and students alike have also started to collaborate, communicate, and share learning products and new knowledge online.

Information professionals have classified these various forms of information in the web to aid in research. They identified between hard and soft information. Hard information refers to those that may be verified by hard data (Wiebe, 2010) and may be quantified (Petersen, 2004); some examples are journal articles and scientific studies accessible in the web. Soft information refers to opinions, personal values, and viewpoints (Wiebe, 2010) that most often appear in the form of blogs, forum & discussion boards. Depending on the topic for research or the study question, students and researchers need to look for either hard or soft information on the web (Gil, 2012). Experts also differentiate between surface and deep web. The Regents of the University of California (2012) described that information retrieved from general purpose search engines like Google and Yahoo form the surface web and information from databases of journal articles and other professional materials are inside the deep web. Devine & Egger-Sider (2009) mentioned that students and teachers need to visit the deep web to demonstrate higher level research skills and go beyond ordinary expectations.

Survey of Online Tools

It may be observed that web 2.0 tools have increased technology affordances. Cloud-based services, for example, have been integrated as a feature in these online tools. Kepes (2011) and Johnson (2011) identified three main clusters of cloud computing services: Software as a Service (SaaS), which refers to fully functional application software available online. Popular examples are Google drive and Zoho for productivity, Google calendar, Kizoa for video editing, Prezi for presentations, Supersaas and Youcanbook.me for reservation of facilities and rooms. Platform as a Service (PaaS) is another group of cloud-based computing services. It refers to the web-based framework upon which one may build application software, like Appsgeyser which builds mobile apps for free. Lastly, there is Infrastructure as a Service (IaaS), which is described as 'hardware space-for-rent'; examples are free website hosting online like Wordpress.com, Weebly.com, and Wix.com may have the feature that falls into this category.

Another observation about a number of web 2.0 tools is their ease of use (Odom, 2010). It may be noted that web designing has become a drag-and-drop module and web hosting services are being offered with free accounts especially for educational purposes in sites like Weebly.edu, Wordpress.com, and Wix.com. Particularly, Wix.com allows embedding of flash-based videos and animations even among its free-level members. Website-creating applications like those mentioned may be used for placing images and link them to other related sites. In Google drive and other similar applications online, users are able to create and post webforms. Links to these Google webforms may be embedded on webpages like Wordpress.com for easy access by site users and visitors. Responses to the Google webforms are kept in Google drive and may be downloaded as MS Excel file or PDF. Google calendar may also be created freely. Users of Google calendar are able to keep track of their schedules and disseminate them to the public by embedding their calendars in a website like Wordpress.com. Especially interesting for school libraries and media centers is the availability of free application software online like the Supersaas and Youcanbook.me which enables the users to create modules for use in monitoring and reserving meeting rooms, library and related facilities. It has record-keeping functions that may be downloaded and opened in MS Excel format. The best features common among all these application software in the web are their free account and the cloud storage that goes with the service.

Project Design

Using free accounts from cloud-computing services, the study looked into the possibility of creating a useful school library website that provided current awareness service for its students and other relevant users, functioned as an online gateway to free but authoritative and reliable information sources, and offered a platform for automated library services and space for collaboration and communication between teachers and students. This website was called LMC Web Assist.

By using free web analytics, the study analysed the statistical data on visits and transactions and measured the usage of the school library website by the students and other relevant users like teachers, school administrators and outsiders. The framework of the project is shown in Figure 1.

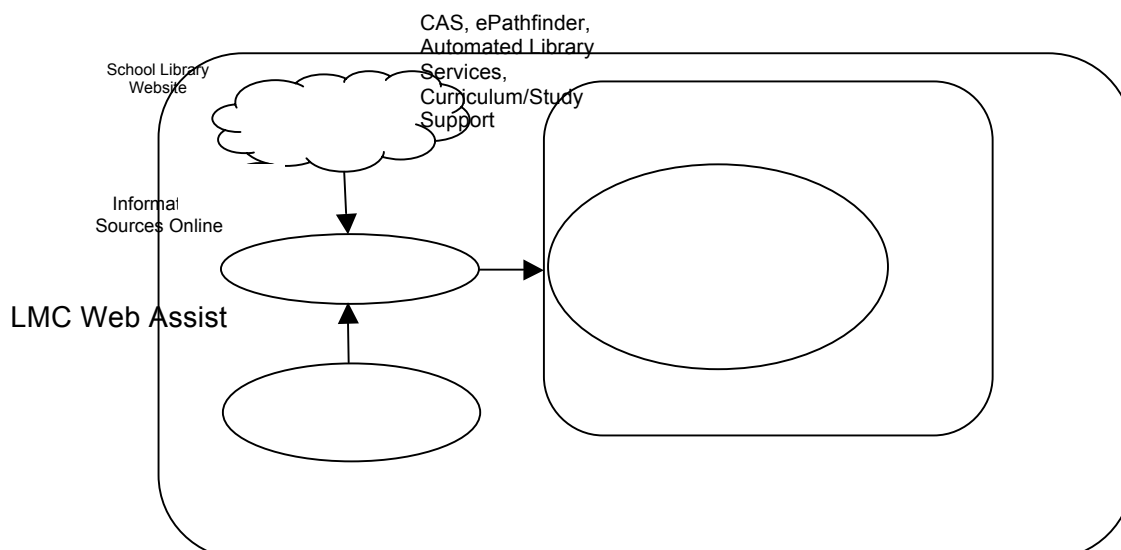


Figure 1: Framework of the Project

Results

The researcher created a school library website and called it the LMC Web Assist project. This project was launched in June of 2011 for the library media center (LMC) of the high school department of Miriam College (MCHS). Using free accounts from various cloud-computing tools, the MCHS library extended its services online. Below is a discussion of its salient features and usage.

Website for the LMC Web Assist

The LMC Web Assist was designed and hosted in Wordpress.com. Using a free account, the school library website was given 3 gigabytes of storage space for pages of texts, pictures, animations and embedding dynamic files like online calendar and webforms. Using Hunsinger's (2005) description as a guidepost, It contained nine (9) main pages offering information about the library and its staff, library programs, new acquisitions, student research guides, curriculum, and study support. It is characterized by interactivity and links as described by Simpson (2003) through embedding online library calendar, modules for library transactions and links to relevant information sources. The nine main pages were: Home, About MCHS-LMC, Resources, eReferences, Open Access, Online Apps, Student Assist, Teacher Assist, and Subject Studyspace. The school library website was also accessible outside the school premises and by the general public.

The pages of Home, About MCHS LMC, and Resources delivered current awareness services (CAS). The homepage contained information on the objectives of the school library website. A QR code was also provided in the homepage for downloading the mobile app version of the LMC Web Assist in Appsgeyser website. The About MCHS LMC page contained the mission and vision of the LMC, its history, policies, and procedures, about the LMC staff, library hours, list of indexed journals and vertical files. It also displayed the library monthly calendar of activities and class visits embedded from free Google Calendar. The Resources page contained downloadable PDF files of new monthly acquisitions.

The eReferences, Open Access and Online Apps pages comprised the ePathfinders of the school library website. For the eReferences page, hyperlinked images and link rolls were provided for free online almanacs like CIA World factbook; UN Statistical Yearbook and the National Statistical Coordination Board of the Philippines; free online dictionaries and thesauri like those from Cambridge, Oxford, Roget's and Merriam-Webster and Visuwords Online; free encyclopedias from Columbia, New Advent and The Performing Arts Encyclopedia; atlases from National Geographic and Atlapedia online. Access to Philippine

government websites from the executive, legislative, and judicial departments, non-government organizations (NGOs), as well as international and local news agencies were also provided through link rolls. A link roll of other school libraries' online resources was also made available in a subpage of eReferences. The Open Access page contained hyperlinked images and link rolls to websites offering free ebooks like Project Gutenberg and eBooks Directory; free ejournals like GreenFILE and Open-J Gate; and digital repositories from local institutions like the National Library of the Philippines, and international organizations like the Library of Congress Digital Collection. Online Apps is the last page in the area of ePathfinders. The Online Apps page gathered selected application software online in link rolls like Edmodo for social learning network, Kizoa for video editing, and Makebeliefscomix for expressing creativity.

The pages on Student Assist and Teacher Assist offered online library transaction modules. Embedding free webforms created in Google drive, these pages provided transaction forms for students and teachers in placing their requests for book and AV materials purchase, media production, technology training, assistance and repair, research assistance and vertical file development. Guidelines for oral presentations and writing research reports in PDF format were also placed as downloadable files in the Student Assist page. Placing links to free accounts in Supersaas and Youcanbook.me, the Teacher Assist page accommodated LMC room reservation and facilities request from the teaching staff. These reservation modules provided secure access mechanism through the creation of usernames and passwords for its clients. Because Supersaas and Youcanbook.me have limited number of users for the free account, the usernames and passwords were distributed according to the number of subject departments.

The Subject Studyspace was the page dedicated for curriculum support for teachers and study support for the students. In the studyspace, support subpages were created for Math, Science, English, and Filipino subjects. In these subpages, links to teacher-recommended websites for subject reference were provided to students interested to do self-directed learning. Teachers' request for online distribution of instructional handouts and worksheets in PDF files, both fillable and not, was also accommodated in the Studyspace.

Free widgets of links were also provided across webpages in the LMC Web Assist. These widgets contained links to the MCHS library OPAC, and online transactions for students from Student Assist page and for teachers from Teacher Assist page.

Usage of the LMC Web Assist

Through the built-in and free analytics from Wordpress.com, statistical data on visits and clicks of the links in the LMC Web Assist were generated. These statistical data showed the use behaviour of the visitors to the site and gave directions for future development of the school library's website. Below are tables highlighting significant statistical data.

Table 1: Number of Site Visits
(as at June 1, 2013)

	Site Visits		
	Total Frequency of Visits	*Monthly Average	**Daily Average
Number of Visits	27,391	1,141	38

*Formula: All-time Site visits/24 months, **Formula: Monthly average/30days

Table 1 shows that, on a monthly average, the LMC Web Assist was visited 1,141 times or 38 visits every day. This is equivalent to one class in MCHS. This implies that the LMC Web Assist was visited by people equivalent to one class of MCHS students everyday.

Table 2: Top Three (3) Visitors by Country
(from February 25, 2012 to May 2013)

Top 3 Visitor by country	Frequency of visits	*Percentage from total frequency
Philippines	10,770	39%
United States	216	.7%
Indonesia	73	.26%

(*Formula: $(\text{frequency of visits}/27,391) \times 100$)

Table 2 shows that the LMC Web Assist has been mostly visited and used by local visitors (from the Philippines). This means that the web assist has been most of the time relevant and useful for local visitors. However, the web analytics did not show the demographic of the local users, much less the users from the intended school community.

It is also shown in table 2 that the LMC Web Assist was visited by foreign users from other countries. This means that non-members of the target community especially from other parts of the world also accessed the school library website and probably found it relevant and useful, although they comprised only 0.7% and below of the total frequency of visits.

Table 3: Frequency of Visits to the Categories of Webpages
(as at June 1, 2013)

Categories of Webpages	Frequency of visits	*Percentage from the total frequency
LMC Homepage	15,159	55.3%
ePathfinder pages	4,079	14.9%
Current Awareness Services	1,823	6.7%
Online library transactions	3,947	14.4%
Subject Studyspaces	2,383	8.7%

(*Formula: $(\text{frequency of visits}/27,391) \times 100$)

Table 3 shows that the LMC Web Assist's home page received the highest percentage of 55.3% from the total number of visits. This is probably because the homepage's URL was placed as a link in other relevant websites of the school which acted as site referrers. See table 6 for this.

Taking the homepage aside, the ePathfinder pages received the next highest percentage, 14.9% of the total number of visits. This implies that, among the online services offered, the LMC Web Assist was found to be relevant by its visitors most often as an ePathfinder to authoritative sites in the world wide web. This reveals that the school library website, which was created using free online tools, achieved its purpose to be an online gateway to reliable and authoritative information sources. Next, the pages for online library transactions received around 14.4%, then the Subject Studyspace with 8.7% of the visits. Receiving the least number of visits, the CAS pages received only 6.7% of the total frequency. This implies that the visitors to the school library website least favoured the checking online for the library's new monthly acquisitions, library policies and procedures, library hours, schedule of activities, list of indexed journals and vertical files. This reveals that most probably, when the users visited the school library website, they meant to look for online resources and make online transactions.

Table 4: Top 3 Links
(as at June 1, 2013)

Top 3 Individual Links Visited	Category of Library Service	Number of Visits
1. Reservation of viewing rooms in Supersaas.com	Online Transaction	1,309
2. Downloading of PDF files in Subject Studyspace	Curriculum and Study Support	777
3. Filling out of webforms for LMC-related requests	Online Transaction	694

Table 4 shows that among the individual links provided in the school library website, the online library transaction service was most frequently used. In particular, the link to the LMC room reservation module in Supersaas website received the most number of visits, followed by links to the PDF files provided by the subject teachers and the links to the Google webforms for LMC service requests. Because only teachers were given access codes to the reservation module in the Supersaas website, this shows that when teachers used the school library website, they most of the time made individual online transactions by placing requests for room reservation in the LMC. Students, on the other hand, made the most of the school website by downloading notes, handouts and worksheets from their teachers in the Subject Studyspace pages. This implies that the school library website, created from free online tools, functioned successfully in delivering online transaction services as well as in supporting the curriculum and study needs of its users.

Table 5: Least Visited Links
(as at June 1, 2013)

Least Visited Individual Links	Category of Library Service	Number of Visits
Senate of the Philippines	eReference/ePathfinder	1
National Geographic Maps	eReference/ePathfinder	1
Columbia Encyclopedia	eReference/ePathfinder	1
President of the Philippines Official Gazette	eReference/ePathfinder	1
Encyclopedia Britannica Online	eReference/ePathfinder	1
Math is Fun	Curriculum and Study Support	1
Godweb Bible Atlas	eReference/ePathfinder	1
LibraryLink (Filipiniana Union Catalogue)	eReference/ePathfinder	1
DeLaSalle University Library	eReference/ePathfinder	1

Table 5 shows that most of the links with the least number of visits were in the category of ePathfinder, particularly from the eReferences group. This means that the users of the library website did not find the relevance of these online sites in their information search. This implies that the LMC needed to intensify its marketing of the free sites. Also, it may be noted that the site Encyclopedia Britannica Online offered the least amount of free information for site visitors. At any rate, these links need to undergo review and re-evaluation for the future.

Table 6: Top Referrers
(as at June 1, 2013)

Referrer	Number of Refers
1. School library OPAC (library.mc.edu.ph)	9,053
2. School website (mc.edu.ph)	3,156
3. Search engines (Google, Yahoo, others)	1,828
4. Room reservation Module in Supersaas.com	508
5. Facebook	132

Table 6 shows that website users accessed the LMC Web Assist most frequently by clicking the link provided in the MCHS library OPAC, school website, followed by the general purpose search engines, and Supersaas. This means that the link provided in the school library OPAC and school website were useful in as much as they served the users easy access to the LMC Web Assist. It is worth noting that the general purpose search engines like Google and Yahoo were included among the top referrers by the Wordpress Analytics. This reveals that these search engines have indexed the LMC Web Assist of MCHS into their databases and gave high page rank for related keywords in its search. Worthy of note as well is the unofficial Facebook link that users must have probably shared to their Facebook friends. This reveals that the users of the LMC Web Assist must have found it interesting to share in their Facebook connections.

Conclusion

The LMC Web Assist was designed as a school gateway to free online resources. However, with the availability of free cloud computing tools, the MCHS LMC created modules to extend its other services in the online platform. It even provided a QR code for downloading the mobile version of the LMC Web Assist. By using the built-in free analytics in Wordpress.com, statistical data about usage of the MCHS LMC Web Assist were generated. Below is the summary of relevant findings:

1. Creating a fully-functional and useful online school library website from free online tools or Web 2.0 is possible. Using these tools, the school library website can deliver services ranging from current awareness services (CAS), pathfinder to authoritative online information sources, online library transactions, and curriculum/study support for teachers and students.
2. Evaluating the usefulness and relevance of the free school library website can be done using free web analytics. Using this free tool, the library can generate reports on the frequency of site visits, frequency of visits by country of origin, most frequently used online services, most frequently visited information sources and most frequently used referrers. Because of the limitations, other important details of usage could not be determined by the built-in analytics of Wordpress.com like the demographic of local visitors to the site, and frequency of visits by various groups of intended users.
3. The LMC Web Assist of MCHS was most useful as an ePathfinder and online library transaction module. The users, in general, visited most frequently the ePathfinder pages. Among the individual links, the online transaction module for LMC room reservation in Supersaas site received the highest frequency of visits from teachers. On the other hand, other features like the eReference links and the Current Awareness Service (CAS) pages

needed to undergo review and re-evaluation because they did not receive substantial visits from the users.

4. Referrers to the LMC Web Assist were mostly from the school library OPAC and the school website. Students and other visitors most often accessed the LMC Web Assist through these sites. But, general purpose search engines like Google and Yahoo made a mark as well in terms of referring users to the LMC Web Assist.

With all these findings, it is recommended that the school library website in Wordpress.com be continued and improved. By using the Wordpress' built-in analytics, constant review and evaluation of its individual pages and links be made. Since the analytics has its limitations, it is recommended that this evaluation about usage be coupled with survey and/or in-depth focused group discussion of its intended users for better understanding and increased relevance.

LMC Web Assist's URL: <http://mchslmc.wordpress.com>

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