

Elementary School Web Site Development

by

David J. Rudemiller

Submitted to
the Faculty of the Information Engineering Technology Program
in Partial Fulfillment of the Requirements
for the Degree of Bachelor of Science
in Information Engineering Technology

University of Cincinnati
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I would also like to show my gratitude to my fellow students helpfulness. They were instrumental, through discussion, direct questioning and example, in the growth of the knowledge I need to meet the challenges of a new career.

Dedication

I would like to dedicate this project to my wife and children. Their love and support in the endeavor of earning an IET degree kept me motivated through difficult periods when I wondered if I could go on. Their insightful feedback helped me focus my goals. Their extra work around the house gave me the time needed to study. And I would especially like to thank my wife who has exerted much effort to financially support us while I was back in school.

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Abstract

This report specifies the criteria in the development of a Web site for St Catharine of Siena elementary school and demonstrates the results of their use. The purpose of the project was not only to create a Web site but also to define and use good Web design principles.

Design issues discussed are numerous. Web authoring and graphic design tools used in developing an optimal site need to be considered, but development starts well before this. User profiles, labeling and navigational schemes, and an overall organizational theme must be decided first. Answers to questions concerning user software (browser compatibility) and hardware (modem speed), as well as the server OS and services offered must be well thought-out. How to access databases, how to make data secure, and which scripting languages can be used are other key matters that must be settled before you begin authoring. Aside from these subjects to consider, simply what the elementary school wants and needs is especially important.

Good Web design principles were continuously referenced in the construction of the elementary school Web site. Displayed within are examples of the main Web pages and a discussion of their design. Web development is not like the print medium where you can control the outcome. Customization of PCs using a variety of platforms and personalized settings complicates the task of creating a controlled, standard output.

1 Introduction

1.1 Statement of the Problem

St. Catharine of Siena elementary school in Westwood was recently equipped with Internet access, which is a great resource for the school. However, the problem with the Web is that it consists of many sites of varying degrees of utility. St. Catharine needed its own Web site specific to its community; a jumping-off point where users could be directed to the best of the Web; a place where a large community could communicate more effectively.

1.2 Definition of the Need

There are four main groups of users: parents, students, teachers/staff, and prospective students/parishioners. Parents can use the site to find current school news, event schedules, and a database of families' phone numbers and addresses. Students could use it as a home page, like AOL or MSN. Links to the best sites, educational, reference, sports, abound. Teachers/staff can post their lesson plans, reading lists, email addresses, and personal information on their Web pages. The site is also a "selling point" for prospective students/parishioners who can get a feel for the school by viewing curriculum, teachers Web pages, tuition, scheduling information, and rules/regulations.

2 Literature Review

The literature I used for the completion of this project fall into four main categories: Web design; graphic design; Web authoring tools; and HTML and scripting languages.

2.1 Web design

The literature focusing on Web design included *Information Architecture: for the World Wide Web* (11), *Yale C/AIM Web Style Guide* (15), *Web Design in a Nutshell: A Quick Desktop*

Reference (9) and innumerable Web sites including *ZDNet Developer – devhead* (17). There were many common themes that could be derived when comparing all this literature, the following being the most distinct.

- Users have to be able to “quickly” find what they are looking for.
- Less is more.
- Do not put in extraneous “bells and whistles” just because one can; relate the multimedia to the content. Keep the graphics, animation, and video to a minimum.
- Do not crowd a page with content, graphics or links. Simplicity and consistency is best.
- Text should not reach from page margin to page margin. It should be sectioned in tables.
- Organize the site based on a scheme. For instance an audience-specific theme (user) or a theme based on topics.
- Have navigation systems that are hierarchical and global.
- It has to be useful.
- It has to be personal.
- The page should take no longer than 10 seconds to load with a 28.8 Kbps modem connection.
- Visit many Web sites trying to decide just what about them made them functional and easy to use.

2.2 Graphic Design

I used three graphic design tools: Macromedia Fireworks 2.0, Adobe Photoshop 5.0, and Microsoft’s PhotoDraw. The applications’ help files and tutorials were used exclusively. Fireworks proved the most useful when developing graphics for the Web. A feature of Fireworks that made it especially useful was the ‘graphic download-time estimation’ at chosen data transfer rates. For example, if 56Kbps was chosen I could manipulate the graphics’ quality until a desired download time was achieved; less than 15 seconds per page was the goal.

2.3 Web authoring tools

Much of the information that was used to begin designing with Microsoft’s FrontPage 2000 and Macromedia’s Dreamweaver 2.0 was collected from the sources *Dreamweaver 2 Bible* (4), and *FrontPage 2000: The Complete Reference* (9). Timely information was found in the *MSDN Online Library* and Macromedia’s online support for Dreamweaver. The application’s

help files were used heavily, and much advice came from numerous Web sites about Web development.

2.4 HTML and scripting languages

The sources I used for scripting were technical and constitute years' worth of learning. I was able to gather some basic information from these books but most of my help actually came from Web sites, too numerous to list yet personally bookmarked, about Web development, HTML and scripting. If I had a need for a JavaScript I searched the Web and could usually find a script I could modify for my use. The Web sites most frequently used were:

- Webmonkey's HTML Teaching Tool (18),
- The Bare Bones Guide to HTML (20),
- ZDNet: `d e v e l o p e r |` - Devhead (22),
- JavaScript Planet v5.0i! (7),
- WDVl: Web Developer's Virtual Library (6),
- The JavaScript Source (4),
- WebDeveloper.com (5).

To modify scripts I used the definitive source for JavaScript documentation, Netscape's *DevEdge Online*. Methods, objects and properties were defined by the creators of this language.

3 Description of the Solution

3.1 Fundamental User Profile

I believe there are four main groups of users: parents, students, teachers/staff, prospective students/parishioners.

Generally parents, students, teachers/staff, prospective students/parishioners will not need instruction in the use of their Web site. With a well-designed navigation and labeling systems, even the most IT illiterate user/ browser should find the site easy to use. However, teachers will need to be instructed in the personalization of their own Web pages. Instructions to parents for updating sports pages, PTA pages, and the Cougar Chronicle newsletter will need to be provided.

3.2 Design Protocols

3.2.1 Browser and Web-Authoring Tools

Some key issues concerning this Web site's production were designing for a variety of Web browsers and which web-authoring tool to design with. If MS Visual InterDev 6.0 had been used exclusively, as opposed to Macromedia Dreamweaver 2.0 or FrontPage 2000, only Internet Explorer (IE) users would have been capable of viewing all objects on each page. Design Time Controls (DTC) that could be dragged and dropped onto a Web page had functionality only when viewed in IE. Some standard HTML tags had to be used so Netscape Navigator browsers can also view all objects. Cascading style sheets and themes proprietary to InterDev are not visible in Navigator. Differing 'Document Object Models' (DOM) exist for Internet Explorer and Netscape Navigator. MS Visual InterDev 6.0 is excellent at database connectivity once the ODBC connection is established. Also, coding with VBScript (used to create active server pages) and JavaScript (used to create client-side dynamic pages) is made easier with InterDev. Dreamweaver 2.0 is an excellent choice when structuring a site, adding elements, formatting the elements and testing with a variety of browsers. Aside from the technical issues time was needed to learn to use these tools. This fundamental issue required the use of FrontPage 2000 for development. However, I designed the Web site in Dreamweaver and imported the pages into to use each application's strengths.

3.2.2 Platform

I developed for a 800x600-display resolution since the majority of people (53%) use this resolution (13). Internet Explorer 4.0 and Netscape Navigator 4.5 will be my baseline browser versions. My rationale was that if one can browse the Web it will eventually be a simple task to download the latest version, since "SmartDownloading" is now available.

Another basic platform consideration is data transfer rate over a telephone line or cable. I used a 56K modem as a baseline.

3.2.3 Layout

The overarching organization of my Web site, site diagram, will consist of a Home page as the main page, with Students, Teachers and Staff, Parents, Sports, and PTA as first level pages or content areas (subsites):

Home

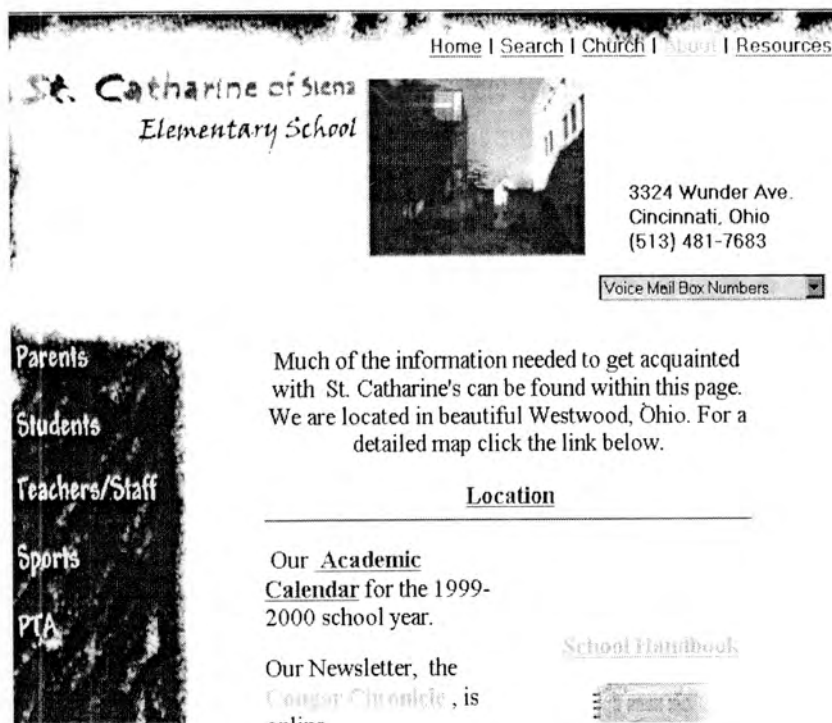


Figure 1 - Home Page

Students

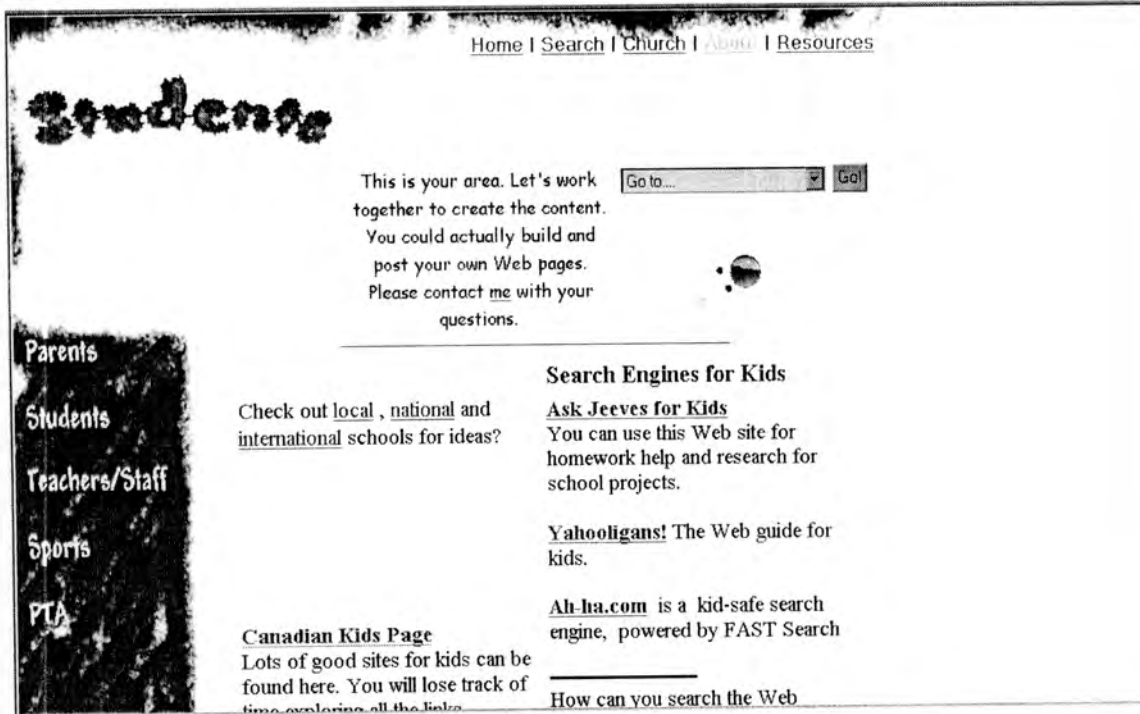


Figure 2 - Students Subsite

Teachers & Staff

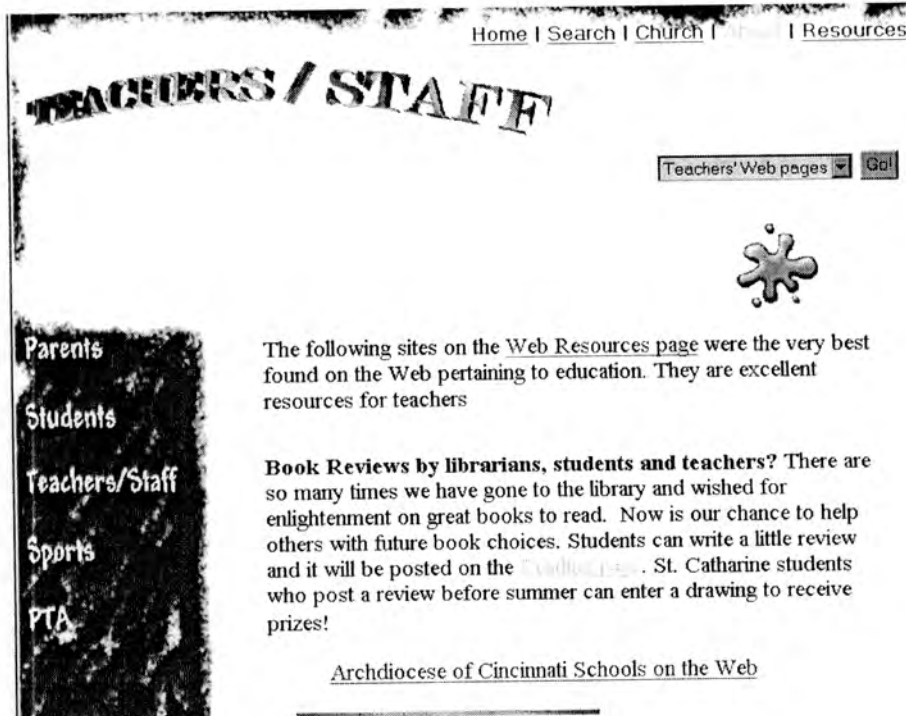


Figure 3 - Teachers / Staff Subsite

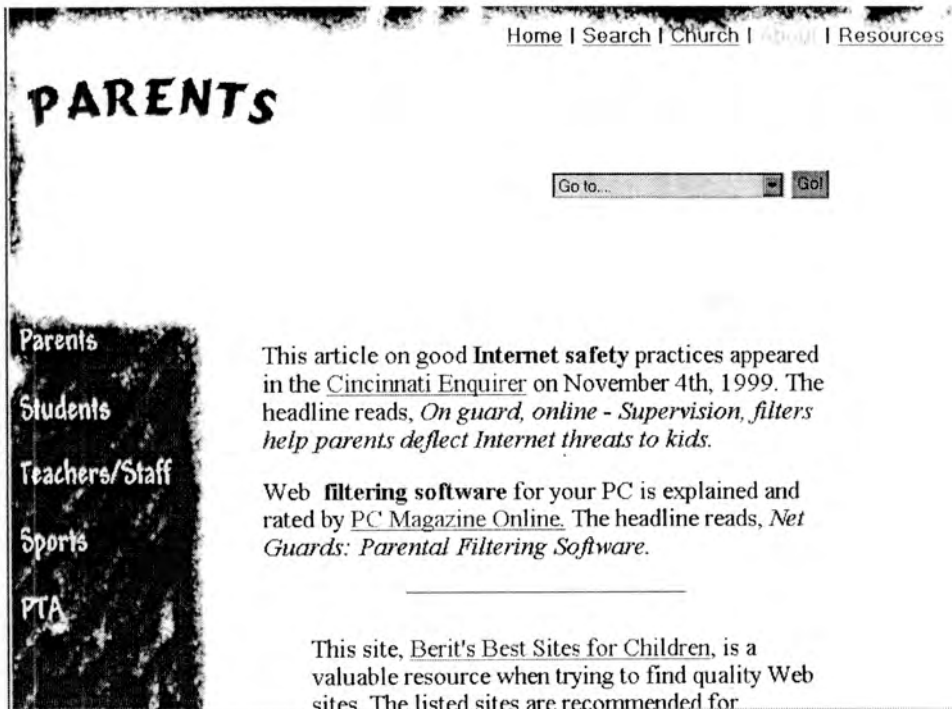


Figure 4 - Parents Subsite



Figure 5 - Sports Subsite

PTA

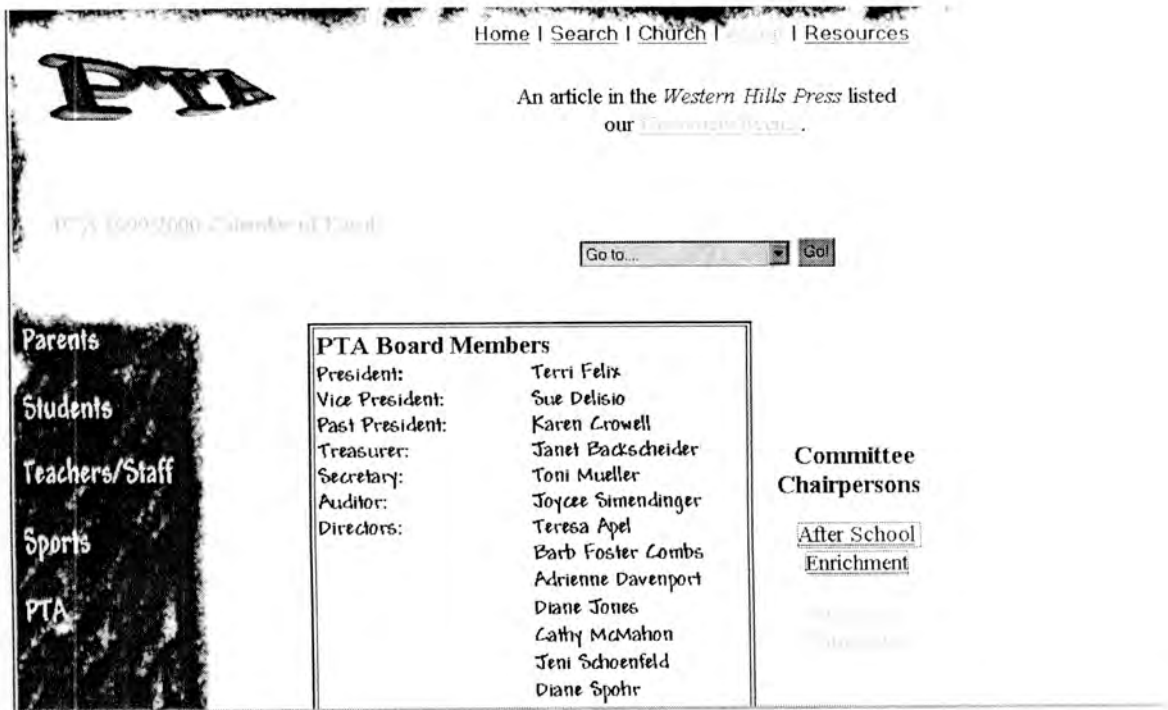


Figure 6 - PTA Subsite

Each content area contains information that is most important to the group that it references. I considered these issues but embellish them after I met with the different group last fall and showed them what I had developed. The Home page contains information that is important for all.

3.2.4 Navigation

The navigational design consists of:

- a group of content areas buttons, or content area navigation bar, on the left side of each page;
- a global navigation bar on the top of each page consisting of [Home](#) | [Church](#) | [Search](#) | [About](#) | [Resources](#);
- a banner corresponding to the name of the content area just below the global navigation bar;
- links to other sites pertinent to each content area are located in the body area of the page or in a drop-down list box.

3.2.5 Theme

Generally, the theme – background, button design, banner, fonts, paragraph style –will remain the same for the all the content areas' main pages. However, backgrounds of second-level pages change according to the content area the users are in, e.g., each sport has a background aligned with that sport, for instance, a soccer ball for soccer. Basically, each content area main page reuses the blue-charcoal background to give continuity to the whole site and to speed loading by using the cached graphic.

Specifically, I used an artistic blue-charcoal background instead of the hard edges of effective e-commerce sites. The banners identifying each subsite are obviously unique make subsite location quickly identifiable. Originally, I wanted to have buttons that were like paint drops and banners underlined with a dripping artist's brush. The theme there was that everyone at the school is in the business of creation. I was afraid that this might be a bit esoteric and the school would have been viewed exclusively as a school of fine arts.

Paragraphs are in chunk blocks of information; no sentences that reach from page margin to page margin are included.

3.3 Database

The database will eventually be fully utilized for the school directory, and for each sport's rosters and schedules. This would allow for editing by a designated user other than the Webmaster. At the present moment the client has concerns about security issues. When ASP pages are used the user can retrieve their pages for editing. The database is an MS Access database and is dependent on the Web server software running on the Web host.

3.4 Miscellaneous

Pop-up menus and error MsgBoxes are standard. Transitions are not used that bog down the system.

Who hosts this site? What requirements are necessary to design with MS Visual InterDev or FrontPage 2000? Originally I projected that WebHosting.Com, Inc., which has an NT package called CorpWeb for \$49.95/month, would host the site. The features includes in the package are:

- 100 MB of Disk Storage,
- 25 POP3 email accounts,
- 25 Autoresponders (A mail utility that automatically sends a reply to an e-mail message),
- Accounts unlimited data,
- Access dB and InterDev support,
- **ASP** Support,
- and more.

A host with these features would have been necessary because it supports Access, InterDev, and ASP pages. A better site was found that didn't use a corporation as the model when formulating its packages; rather, the packages were created with a more general population in mind, e.g., a school.

After much searching I found the site's Web host, www.burlee.com/, located in Burlington, Vermont. It was discovered when I visited Web Host Directory, <http://www.webhostdir.com/webhostawards/nt.asp>. It was a great discovery and matched all my criteria. It only costs \$180 a year and so far they have been quick to respond with excellent support. The features includes in this package are:

- **Unlimited** Disk Space (MB),
- **Unlimited** Data Transfer (MB),
- 25 POP3 E-Mail,
- Unlimited Auto-Responders,
- Unlimited Forwarding,
- Full Database Support,
- Full ASP (Active Server Pages),
- Full Monthly WebTrends Web Stats,
- Microsoft®FrontPage® 2000 Server Extensions,
- Industry's #1 Tech Support,
- Family Friendly,
- Dell Quad Pentium Servers running Windows NT 4 IIS 4.0

4 Timeline –

Milestones	Total Time	Completion Date
Prototype complete; overarching theme and layout with some functionality	20 hours	August 30,1999
All graphics must be developed for all pages	30 hours	September 1999
Content design precisely formulated; begin adding content; begin adding links	40 hours	October 1999
Work on database development and ASP pages with VBScripting	40 hours	November 1999
Continue work on database development and ASP pages with VBScripting	40 hours	December 1999
JavaScript if needed to make client-side scripts work for Netscape Navigator	20 hours	January 2000
Test, test, test and fix	20 hours	February 2000
Fix minor details	10 hours	March 2000
Phase One done		March 3, 2000

5 Budget -

The budget consists of the software needed for Web authoring – MS Visual InterDev 6.0, MS FrontPage 2000 and Macromedia Dreamweaver 2.0. I have been supplied with these or acquired them myself. I also need software for graphic design – Macromedia Fireworks 2.0, or Adobe Photoshop, or Adobe Illustrator; I have already been supplied with Macromedia Fireworks 2.0 and have bought Adobe Illustrator 8.0 and MS PhotoDraw.

Hardware that I was necessary was an ADSL line (\$39.95/month) and some secure server space at Burlee Networks, www.burlee.com/. This host was necessary because it supports Access, Microsoft FrontPage extensions, and ASP pages. The ADSL line was useful when developing at home, not only because of its high transmission speed, but also because it allowed use of the telephone when I was developing for long periods of time. The secure server space allowed for exact simulation, and the security needed not to allow anybody to access my files, as they easily could have if I developed on the Web server in the 4th floor IET lab.

These items were necessary to create my Web site at home. Home creation was essential because I had little time left in the day to travel to the IET lab after working and it lessens the possibility of distraction.

6 Objective Of The Project

6.1 What It Will Do

The bottom line is that a Web site for St Catharine's will make easy access to community-oriented information and educational resources. This Web site will not only increase the likelihood of finding the appropriate resources but it will save time too. Search capabilities on computers are much quicker than books, although sometimes too much information is returned. If the search is focused with the applicable user profile considered, then the search could be more effective. A community-oriented Web site's benefits could include:

- Saving users time by using computer time more efficiently and productively. How? Focusing the information and links available.
- Intensifying the thirst for knowledge by creating an enjoyable, pleasing-to look-at, easy-to-navigate, and dynamic multimedia site.
- Developing users' computer literacy.
- Utilizing the great educational resources on the Web.
- Ameliorating communication for a large community.
- Marketing the school more effectively.

6.2 How It Will Work

On "quick" entry into the Web site www.stcatharine.org (a domain name officially reserved for two years) one finds:

6.2.1 A Home Page Containing HTML Links To:

- School News, Cougar Chronicle online, or just feature articles
- Upcoming events
- Lunch Menus
- Ask the Principal
- School history
- Pictures of the school
- Sponsors/Advertisers

Three types of navigation bars on every page (See Design Protocols - Navigation section 3.2.4).

The homepage navigation bar includes buttons that has links to the following five content areas: Parents, Teachers/Staff, Students, PTA, Sports. Each content area contains information as follows.

6.2.2 Parents' Content Area Main Page Containing HTML Links To:

- Tuition
- Enrollment
- Posted issues to discuss
- Information on Internet safety.

6.2.3 Teachers'/Staff Content Area Main Page Containing HTML Links To:

- Web pages for each teacher and/or staff member
- Lesson plans, projects, assignments posted
- Contact Your Teacher
- Posted issues to discuss
- E-mail addresses

6.2.4 Students' Content Area Main Page Containing HTML Links To:

- Links to, research, encyclopedias, dictionaries, math sites...
- Links to other grade schools, high schools, colleges, Cincinnati sites
- Student Clubs and Organizations (description, activities, reports)
- Alumni email
- Feature articles on alumni

6.2.5 PTA Content Area Main Page Containing HTML Links To:

- PTA activities and volunteers needed
- ASP pages to create PTA page
- Security to the PTA page for creation/editing

6.2.6 Sports Content Area Main Page Containing HTML Links To:

- Pictures of the sports teams
- Sports news
- Rosters, schedules, scores, practice times, feature articles for girls and boys soccer, track, volleyball, and baseball, softball, football
- ASP pages to create sport's page
- Security to each sport's page for creation/editing

As the project evolves and input increases from various sources more information will be added to this site.

7 Proof of Design

What I conceived to do I basically achieved. Essentially, I thought of myself as a cybrarian- librarian of cyberspace -categorizing and organizing information for easy retrieval. More than anything my project is an investigation of good practices of information architecture.

At great issue is how much time it took to learn any of the four main areas of my project: Web design, graphic design, Web authoring tools, and programming languages (HTML and scripting). Many of the times I knew what I wanted to achieve but did not have the knowledge to accomplish the task. Time constraints and the biology of the brain limited the acquisition of all knowledge necessary. Notably, I accomplished much but I wanted the Web site to be so much more. What follows is a description of what I accomplished and what I could not.

The audience-specific design, based on my categories of fundamental users (parents, teachers, students, prospective parishioners), did not change. Teachers, staff, parents still need to become knowledgeable about accessing the Internet, not only for themselves, but more importantly to guide their students/children to appropriate use of it. My navigation scheme, based on the users, steers the users to the information appropriate for them. I spent many hours searching the Web gathering links to the best information and wonderfully crafted sites; this is what I guided the users to. Teachers can now access timely resources about new teaching methods. Parents can get information about Internet safety and tutorials to guide them in Web usage. Students can find help for writing, reading, research and more. They assuredly could have done that before, but by being the cybrarian I have focused their energies. I did not deal with the "Sports" and "PTA" users as thoroughly because, frankly, I could not be decide exactly what was wanted. As I progressed with my Web site I realized with more regularity that the students

would be the primary users of this site. Anecdotally I discovered that vast majority of parents know little about the Web, but were not unwillingly to learn.

To combat the fear of the Web, i.e., to show the less informed how to use it and good places to start, I developed a "Web Resources" page. This page is taxonomically arranged similarly to other Web directories, e.g., Yahoo. Links are grouped in general categories, for instance Education, becoming more specific as the user steps down the categories. Some links I annotated if I thought a description of the site was needed to inspire the intended user to click.

I created various other pages as well. The "About" page describes the mission statement and activities that are featured at St. Catharine's. This page is a good selling point for prospective parishioners and to remind those belonging now what a good thing they have. The "Academic Calendar" page consists of a yearly calendar, formatted like the printed-version in the Handbook, and a monthly calendar I created in MS Publisher. Lengthy "Handbook" pages were created which contain hyperlinks and are searchable. The "Cougar Chronicles" is sent to me by e-mail and generated from an Adobe PageMaker Web page conversion wizard. The "Upcoming Events" page was actually an article in the community paper that I converted to HTML. Most importantly, I created "The Reading Page" where kids can find book reviews by librarians, their teachers, and those that I hope they create. This is the first step in their interaction with the Web site. I have established a contest to inspire them to write and submit their own reviews.

Designing the graphics for the site was gratifying, but the decisions sometimes demanding because I was graphically constrained by the data transfer rates of the users' hardware, which I had benchmarked at 56Kbps. Even if I liked what I created it had to be tested and retested to make sure it loaded quickly. The theme for the buttons and banners, which were to be palettes and paintbrushes, could not be accomplished successfully because of my lack of graphic design skill, but more significantly they would have required long loading times. If my site were to be used more as a portal on a school's intranet, the limitations of slow-loading

graphics would not have been an issue. Nevertheless, I still wanted to give the site an “artsy” feel appealing to an educational environment for children, not using the geometric graphics of many effective sites. After much trial and error I decided on the blue, charcoal background that envelops the main pages and gives it a “warm”, “homey” feeling. I not only used blue and yellow because they were St. Catharine’s colors, but because yellow on blue is very readable. To combat the problem of slow loading times I reused images, which remain cached, so they did not have to download again.

Browser compatibility issues were key to development decisions about my project. Version and company variations were critical to many of the choices I made. Using Netscape Composer or Notepad as my development tools, my previous experience until I made the leap to MS Visual Interdev, did not lead me to discover the problems inherent in non-standardized Web browsing. I originally thought I would use the bulky, industrial-strength InterDev for my development but was scared off by the browser compatibility issues; ‘design time controls’ (DTCs) that I just dragged and dropped onto the Web page were not displayed on Navigator. Learning InterDev was good because it taught me how browser compatibility makes apparent the differences between what one develops and what actually results. I learned that Web development is not like the print medium where you can control the outcome. People have different hardware and use personalized settings on their PCs. I then hoped to use Deamweaver but the “Time constraints and the biology of the brain limiting the acquisition of all knowledge” issues only allowed me to use FrontPage 2000 (very functional but not as robust as Deamweaver or InterDev). I learned FrontPage 2000 by carving out a project on my co-op; in other words, it was necessitated that I use FrontPage 2000 because that was the only Web authoring tool at which I was proficient. Also I learned most of my HTML on my co-op by using a UNIX version of Notepad.

Instead of relying on components or 'design time controls' inherent to FrontPage and Interdev I decided to use used client-side JavaScripts because they are generally standard, except I never had done any scripting up to this point. I also wanted to create ASP pages using VBScript with ADO-ActiveX Data Objects-to access my databases. I had done little of this. To begin I needed to find a Web host to fulfill these technical needs of creating ASP pages and accessing a database, i.e., I needed server support for Access, ASP, and FrontPage 2000 extensions: an NT Server running IIS. I also needed the Web host that had good technical support, is economical and included enough e-mail addresses to insure that the St Catharine's staff that needed one could obtain it; most teachers already have them provided by The Hamilton/Clermont Cooperative Association of Boards of Education (H/CCA). After much searching I found my host www.burlee.com/, located in Burlington, Vermont, when I visited Web Host Directory, <http://www.webhostdir.com/webhostawards/nt.asp>. It was a great discovery and matched all my criteria. It only costs \$180 a year. So far, they have been quick to respond with excellent support.

What I wanted and what the teachers and staff thought necessary varied somewhat. I had meetings with the principal, the head of the computer lab, as well as the parish's Web site exploratory committee chairman. The principal was very supportive but felt a directory of phone numbers, street addresses and e-mail addresses was a frightening endeavor. Privacy of parish members would be curtailed if their personal information were available online. This nixed my idea of developing a database that could be accessed only by supplying a username and password. Principal Meyer decided that no assignment or homework schedules would be posted on the site. The accepted practice of the use of nicely bound, yearly planners was to be maintained. I like the planners and the task organization it teaches the children. I do not think it would have worked anyway; the head of the computer lab said teachers' Web pages were not wanted. Her feeling from daily contact with personnel was that they were technically incapable and even less interested in creating their own pages. I still gave them three options for creating

their own pages on their content area "Teachers/Staff" page. The three options were a link to the Teachers.net "Homepage Maker" page, a link to Yahoo!GeoCities where you can build you own page, and links to good Netscape Composer tutorials (having access to Composer is the most probable of all Web authoring tools). After they finish their pages they just e-mail the Webmaster the link or the actual HTML file. And finally no pictures of people were to be allowed on the site.

I have had good feedback from the parishioners that have seen the Web site. They like the design and feel it is easy to navigate. Some student felt the there is just not much in their "Students" content area. This is understandable and it does not surprise me for I hope that they develop the content. I have already had requests to add information to the "Track" page, by the track coordinator, because of the approaching season.

8 Recommendations and Conclusion

This is just "Phase One" of the St Catharine of Siena's introduction to the World Wide Web. There is still much to do and much more for me to learn. As I gathered information about design and content I visited various schools' Web sites around the world; I stumbled across a Canadian site, the Rocky View School Division No. 41 located in Calgary, Alberta. It appears their was a mandate to have all schools in the district have a Web "presence", whether they could or wanted to. As I revisited some of these schools one year later I feel inspired by the progress of some. The architecture on some has gone from simple jumbles of links to more easily navigable sites. ASP pages have been added to others. When my daughter graduates in three years St Catharine's Web site will assuredly be a different and better site. I have many ideas of how I want the site to progress.

I desperately want to get the students involved with this site, to have kids create their own Web pages just for the fun of it. I would like to actually get involved helping them while

spending more time at the school. Categorizing the wealth of online book reviews, e.g., Mystery, Sports, generated by the students will be a task that needs to be undertaken. Creating discussion groups on-line and local to St. Catharine's will allow students to share ideas; when they are not face-to-face and have time to refine their ideas, as the writing process has a tendency to do, many students' critical thinking will be enhanced.

All the links on the "Web Resources" page should be annotated. Links will be continually added as there are supplied by all the users. The 'Thought of the day' will be in the near future. It is just a JavaScript and a collection of thoughts away. The graphic scheme will be more elegant. Maybe I could collaborate with a real graphic designer. I will be left to the task of organizing the site around the new graphics scheme.

There are many scripting issues that I would like to focus on. ASP pages are needed so that the users can become more independent, e.g., they will not have to depend on the Webmaster to create and update their pages. Information will be timelier. Immediate updates could be made to pages when event times change. Developing a database that could be accessed only by supplying a username and password is still a dream of mine and this involves learning more of VBScript and ADO. Refined our search engine and guest book requires this technology also. Finally more DHTML technology should be utilized, for instance, adding a JavaScript to create rollovers to the navigational scheme.

Appendix A - JavaScripts

This following type of JavaScript was used often to define the size of the window to be opened by clicking a hyperlink. These scripts were located between the `<script Language="JavaScript"></script>` tags in the head of the document but were called from within the body of the document like:

```
<a ref="JavaScript:OpenCougarChronicle()">Cougar Chronicle</a> or like
```

```
<a href="JavaScript:OpenReading()" onMouseOut="window.status='The Reading Page';  
return true;" onMouseOver="window.status='The Reading Page'; return true;">Reading  
page</a>
```

```
function OpenCougarChronicle()  
{open('./CougarChronicle/Newsletter.htm','CC','resizable=yes,scrollbars=yes,width=440,  
height=440,top=10,left=10');  
}  
function OpenReading()  
{open('./Reading/Read.htm',Read,'resizable=yes,scrollbars=yes,  
width=600,height=480,top=10,left=10');  
}
```

This function was used with a drop down list box. It was called within `<form></form>` tags.

```
<!-- Begin  
function formHandlerTeacher(Teacher){  
var URL = document.form.site.options[document.form.site.selectedIndex].value;  
window.location.href = URL;  
// End -->  
}
```

It is called within the body as so:

```
<form name="Teacher">  
  <select name="site" size=1>  
    <option selected>Teachers' Web pages  
    <option value=  
"http://www.stcatharine.org/Teacher_Staff/webmaster_example_page.htm">Mr. Webmaster  
  </option>  
  </select>  
  <input type="button" value="Go!" onClick="javascript:formHandlerTeacher()">  
</form>
```

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