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PolicyWeb: A Tool for Policy Analysis

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The University of Georgia, located in Athens, Georgia, has an enrollment of approximately 30,000 students and offers bachelors, masters, and doctoral degrees through its 13 schools and colleges. The Department of Housing and Consumer Economics has an enrollment of approximately 220 undergraduate students and 19 graduate students (masters and doctoral) with 14 faculty members.

There has been an explosion in the availability of current and accessible information through the recent growth of the Internet. Finding reliable and factual information on the Internet, however, can be a daunting task for faculty and students alike. Policy issues and current events in particular are ideal subjects of investigation on the Internet for researchers and educators. Many governmental agencies and other policy-related organizations are maintaining the most up-to-date and relevant information through their own websites.

The Department of Housing and Consumer Sciences at The University of Georgia, through a United States Department of Agriculture grant, has created a policy analysis website that will facilitate policy research on the Internet. This website includes lessons to acquaint users to the Internet, inform users of pertinent issues of privacy and regulation on the Internet, how to use this site specifically, and how to contact policy makers and regulators through the Internet. PolicyWeb makes searching the World Wide Web for resources on policy analysis easier and provides a content analysis of each site in its policy website database. PolicyWeb helps make the World Wide Web more manageable for all levels of investigators doing policy research on-line.
PolicyWeb: A Tool for Policy Analysis

The importance of using technology in higher education has long been evident, especially for certain fields such as the “hard sciences” and engineering (Green & Gilbert, 1995). Fields not associated with technology, per se, have had to recognize the importance of integrating technology into their curriculums. At the very least, all educational fields face the challenge of research and information gathering. Technological advances in collecting and sharing information highlight the need for all students, professors, and researchers to be comfortable and knowledgeable with these new tools. Learning the research process is often as important as the content of the research (Bowman, 1991).

In order to use the new technologies most effectively, researchers must be able to use and manipulate the new technology, in addition to using it for collecting information related to their study. In particular, the use of the Internet for information gathering has become very important in education, for several reasons (Geyer, 1995). First, employers expect students to enter the job market with at least some computer literacy skills (Codde, 1997). Students themselves are beginning to demand that they be taught computer and “Internet literacy” (DeLoughry, 1996; Gizzi, 1996). Second, the trend toward decreasing resources while increasing student enrollment creates a need for greater access to resources in the most economically efficient way possible. Since many students can access the same information at the same time on the Internet, the cost for maintaining huge library collections and obtaining updated materials can be decreased significantly. Third, students who have time constraints due to work or other obligations are now able to do their research at any time of the day or night from their own computers (Oblinger, 1997).

Another advantage to using the Internet is the ease with which materials may be updated. Books and other printed materials must be republished in new versions before students have access to them. On the other hand, information on the Internet can be updated very quickly and students can have immediate access to the most up-to-date information available (Brown, Nielson, & Sullivan, 1997). The federal government in particular has embraced the use of the Internet for making information available to the general public and for things such as federal tax forms.

There are drawbacks, however, to the wealth of information that is placed on the Internet. The sheer volume of information found on the Internet can be daunting to even the most seasoned researcher. Some users may be overwhelmed by the thousands of documents returned when querying the typical search engine. The efficiency of
researching on the Internet decreases when users are forced to wander from site to site, while trying to find sources of information that match their needs (Carvin, 1997).

The ease with which information can be placed on the World Wide Web raises serious questions about the quality of Internet sources (Eastwood & Smith, 1996). It can be difficult to determine the legitimacy of that information, especially since websites can change or disappear overnight. Researchers using the Internet must be especially diligent about verifying and documenting their sources. Establishing criteria for the quality of Internet resources is critical.

The authors of this paper, through a USDA Challenge Grant entitled "Navigating Cyberspace for Policy Analysis in Family and Consumer Sciences," have created a policy analysis website, PolicyWeb (http://www.fcs.uga.edu/policyweb), which facilitates policy research on the Internet. This project addresses curricula design and materials development, faculty preparations and enhancement of teaching, instructional delivery systems, and student experiential learning. PolicyWeb focuses on the development of a series of lessons for faculty and students, as well as anyone else interested in the policy-making process. Each lesson covers an important aspect of using the new technology in policy analysis.

PolicyWeb's goal is to integrate technology into curriculum and research. The benefits have the potential to go far beyond the particular class, research project, or issue that initially brings users to the website. PolicyWeb provides an opportunity for faculty and students across the world to interact with policy makers and develop the "best" research programs and action plans possible. The synergism created with the Internet is unsurpassed by any other medium.

PolicyWeb was developed with these issues in mind. PolicyWeb presents information on two main topic areas: using the Internet in general and using the Internet for policy research specifically. By providing a concise set of lessons on the Internet, students are able to find information on using the Internet in a linear pattern or they can use the text search engine to answer specific questions. The policy analysis portion of the website provides students with a database of several hundred Internet resources for policy analysis and lessons on communicating with regulators and policy makers. Students are able to apply the skills they've learned to applied exercises in policy analysis. Since PolicyWeb was not created with one specific course in mind, it can be helpful in many disciplines, and is open to all Internet users.
PolicyWeb has the potential to influence students to do more in-depth research in all of their classes with the convenience of the Internet.

This paper will detail the history of the PolicyWeb project. The proposal, creation, implementation, and evaluation of PolicyWeb did not always follow the original plan and we feel others may learn from our experiences. Our experiences provide valuable information on projects devoted to infusing technology into the classroom.

The PolicyWeb Project

PolicyWeb started as the brainchild of Anne Sweaney and Carol Meeks in 1995. The Internet, and more specifically, the World Wide Web, were familiar terms to most people but had yet to be incorporated seriously into most college courses. After attending a symposium on the World Wide Web, Anne Sweaney recognized the valuable asset that it could be, not only to students, but also to researchers. The problem was enabling students and researchers to use the World Wide Web wisely and efficiently.

We identified two main areas with which students and researchers needed to be acquainted to make the most of this resource. First, they needed the basics of using the Internet, including aspects such as browsing and using email, along with the legal and professional aspects of using the Internet for teaching and research. Second, they needed some specific information tailored to the type of research they wanted to do on the Internet. Armed with both a general knowledge of the Internet and specific research skills, students and researchers would be able to get the greatest return to their efforts spent on the Internet.

But what specific research topic would most benefit a wide variety of people across a vast number of fields? The first and foremost goal of this project was to provide maximum benefit to the maximum number of people. We recognized that virtually no field is untouched by the area of policy analysis. Indeed, “the practice of public policy analysis draws upon multiple disciplines and perspectives” (Carver, 1996). Recent trends in the transfer of responsibilities from the federal to state and local governments increase the need for policy analysis, as has been the case historically (Fry & Tompkins, 1978). Even fields in which few people would consider policy analysis to be related are still affected by policy. Funding and support are a necessary part of any kind of research. Understanding the policy-making process can be integral to the survival of many research programs. Thus, students and researchers in fields
commonly associated with policy analysis such as family and consumer sciences and political science, as well as their peers in fields as diverse as art therapy, comparative literature, and music can all benefit from an understanding of the policy-making process.

The combination of the World Wide Web and policy analysis promised to make a dynamic pair for the project. Policy analysis itself “bridges the gap between theory and practice” (Carver, 1996). Students are more likely to be motivated about learning when using a computer and are more likely to “learn about learning” when using computers (McKeachie, 1986). The World Wide Web encourages active learning (Ells & Holland, 1997) and seems to be particularly useful for motivating students, according to a recent survey of educators (Woodall, 1997). Technology can be used to bridge the divide between the classroom and the “real world” (Green & Gilbert, 1995). The World Wide Web can be used as a tool to move away from passive learning. Students can instantly transport themselves to websites to obtain the latest information on the topics they are studying. Links to other websites allow for a nonlinear progression in research that often prompts new lines of thinking or topic development. Students can take “virtual field trips” in classes that cannot travel due to time, cost, and class size considerations. These virtual field trips can also be useful in preparing students taking the actual study tours by introducing them to places and people they will visit. These virtual visitations give students enough background information so that they can interact in more meaningful ways with the policy-makers and regulators they will encounter in person.

We decided that providing information on the basics of the Internet and the specifics of policy analysis would be best achieved through the creation of a website, rather than a traditional printed medium. The website allows for both a linear progression through the information provided in lessons and for nonlinear use of the information for specific questions. A database was created of other websites useful for policy analysis and research to reduce the amount of time spent in information search. Use of a website also allows for the creation of site-specific search tools.

PolicyWeb was beginning to take shape conceptually. Since the creation of a website was going to require the use of technically competent team members for programming, database compilation, and lesson construction, finding a funding source was the next step in the process. It was decided that obtaining a grant from an organization focused on both technology and education would be the best fit for the project.
The USDA Challenge Grant seemed a perfect match. Through its Challenge Grants, the USDA seeks to promote innovative use of technology to maintain academic excellence in post-secondary education. These grants are also aimed at promoting research in the areas of agricultural and consumer sciences. Carol Meeks1 and Anne Sweaney, at the time both professors in the department of Housing and Consumer Economics in the College of Family and Consumer Sciences at the University of Georgia, proposed that a PolicyWeb website would be extremely helpful to policy researchers in the fields of agricultural and consumer sciences. However, as stated earlier, this website could be very useful in a diverse range of disciplines and research activities, giving it relevance beyond the required scope of the project.

The USDA Challenge Grant was awarded in the fall of 1995 for a period of two years. Carol Meeks, Anne Sweaney, a graduate assistant, Hangbo Tang, and Mark Hazen, College of Family and Consumer Sciences webmaster, were the original members of the PolicyWeb team. The first step in getting the project off the ground was the actual creation of the website. Mark Hazen, the webmaster for the College of Family and Consumer Sciences, worked with Hangbo Tang to teach him the art and science of web design. Mark worked with Hangbo intensively several hours a week teaching him UNIX and HTML programming. During fall quarter 1995 and winter quarter 1996, project members began searching for policy related websites on the Internet and began researching and drafting outlines and introductions for the lessons.

External factors necessitated Hangbo's departure from the University in spring of 1996. At this point, responsibility for the webpage design and programming was turned over exclusively to Mark. Another student, Kennita Kind, took over the database researching responsibilities for the project for the summer. In the fall of 1996, another graduate student, Kelly Manley, joined for the duration of the project, taking over Hangbo's original responsibilities (with the exception of website design and programming). Fall quarter of 1996 and winter quarter of 1997 were primarily spent writing the lessons for the website, adding additional resources to the database and making arrangements for the GSAMS (Georgia Statewide Academic and Medical System satellite network) presentation to be held in March. Mark continued programming the website and its search engine, in addition to reviewing the lessons for technical errors.

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Spring quarter of 1997 was spent preparing and giving presentations on PolicyWeb at professional meetings, editing the database, entering PolicyWeb into other search engines on the Internet, and conducting research for articles about the project and using the Internet for teaching and research. Summer of 1997 was spent exploring new websites for possible inclusion in the database, drafting a plan for an experimental design for use with the PolicyWeb website and drafting articles about PolicyWeb. Though the PolicyWeb was written as a two year project, the USDA granted a no-cost extension so that more evaluative research could be conducted. We felt the evaluation component of the grant would be essential so that others might build on our work.

The Website

PolicyWeb was unveiled for public use on Thursday, March 20, 1997. In order to maximize the potential for Internet traffic, the PolicyWeb URL was entered into well over a hundred other search engines on the Internet (such as Infoseek, Lycos, etc.). It was also sent to websites that make regular announcements about new websites on the Internet. A PolicyWeb link was created on the UGA College of Family and Consumer Sciences homepage to help increase traffic to our website. These Internet promotions were accompanied by handing out announcements about the PolicyWeb website at every professional meeting attended by PolicyWeb team members and emails to lists of persons likely to find PolicyWeb useful in their work or study.

In order to maximize the benefits of using the Internet for information placement, two search engines were included in the PolicyWeb website. The first search engine searches the text of the five lessons. This search engine provides for nonlinear use of the website’s information. For example, if a website visitor wants to learn more about copyright, but does not want to read through the text looking for every part that includes a reference to copyright, s/he may use the search engine and it will return every point in the lessons in which the word “copyright” appears. Multiple terms may also be used with this search engine such as “Internet and law” or “Internet not email.” The first multiple term will yield all instances in which both “Internet” and “law” appear. The second multiple term will only yield those instances in which “Internet” appears without the word “email.” This feature allows users to be more specific and efficient when searching for information in the lessons. Of course, the lessons may also be used in linear fashion, with convenient “previous,” “index of lessons,” and “next” buttons at the bottom of each page of the lessons.
The search engine for the database works in the same way. A string of words may be submitted, but only those resources in the database that contain all of the words will be returned. While the search engine will ignore the terms “and” and “but” in search strings, they will not be returned as errors. The term “not” (or a minus sign) may be included to help narrow searches as in the example “president and history but not vice” (which also could have been entered “president history not vice”). That request would return all sites with reference to presidential (not vice-presidential) history.

A special editing tool was created for the PolicyWeb database. This editing tool is only accessible to authorized users through the use of a password system. The editor enables us to make changes to the database without knowledge of complicated programming languages. A search engine finds the website that is to be edited and an editing form appears on the screen. Changes are made to the description, ratings, and/or URL and submitted back to the editor which then performs the changes. The editor also keeps a list of changes made to the database and the date and time they were executed.

Creating an easy to use, yet visually interesting website is no small task. Our website has thousands of lines of programming, including relatively complicated features such as two search engines and an email response form for website evaluation and comments by our visitors. We were fortunate to have the talents of a very skilled webmaster, Mark Hazen. However, there are a few drawbacks to having a rather complicated website such as ours. Shortly after our GSAMS presentation in March, Mark left the College of Family and Consumer Sciences to be the system administrator for the UGA College of Arts and Sciences. When a few bugs began to appear in the editor program created especially for working on our database (which in turn caused problems with accessing information in the database with the search engine), we had no one who was an accomplished Perl programmer to work on the problem. We were fortunate that our current system administrator, Mark Toomey, was able to fix a few problems even though he is not entirely proficient in Perl. There was a great loss of time, however, in that before the nature of the problems with the database were figured out, a great deal of time had been spent editing website descriptions and entering new entries. When it didn’t appear that the first edits had “taken” they were redone and websites that seemed to “disappear” from our database were constantly re-entered. As it turns out, nothing had “disappeared” but had just been altered in a way that the search engine couldn’t locate them. Thus the second round of editing and re-entering of websites was
unnecessary. This situation does, however, point to certain considerations that should be taken into account when planning for the long term maintenance of a website. Maintenance expenses (including hardware, software, and especially staff) must be considered when calculating the cost-effectiveness of using the World Wide Web (Trochim, 1997).

It is imperative that website owners faithfully maintain their sites. Website development is an on-going process, by the nature of its technology (Trochim, 1997). The volume of information on the Internet is growing at a fantastic rate and much of the information is not up-to-date and many websites have been orphaned (left without continued maintenance). In order to maintain the integrity of the Internet, website owners must take it upon themselves to make sure that the information on their sites is correct and up-to-date, or make disclaimers about their information. Therefore, any plan for website creation should include the following considerations. First, there should be responsible parties to maintain the accuracy of the website information or to remove the website from the Internet when the information is no longer useful. Second, it is necessary to make sure that there will be access to competent technical support for problems that surface with the website or for upgrades and additions. Third, for the convenience of visitors, links from the website should be checked periodically to make sure they still work.

**The Lessons**

Computer assisted instruction is one of the teaching methods best suited to the modular format (Fairchild, 1978). Additionally, the presentation of information in modules is a common teaching method, but is particularly suited to policy studies (Fairchild, 1978). Thus, our lessons are broken into “blocks” that allow for more individualized use of the information.

Lesson One focuses on “the basics of cyberspace.” Topics covered include the Internet, the World Wide Web, browsers, email, universal resource locators, and there is a glossary of frequently used terms. This lesson gives a general overview of how the Internet works, how one gets on the information superhighway, and how to surf the Internet. This lesson provides a general resource for those users not familiar with the Internet.

Lesson Two covers issues of privacy and regulation on the Internet. Users of the Internet need to be aware of the kinds of material that are appropriate for distribution and the current regulations related to the information
superhighway. Topics cover issues such as the Freedom of Information Act, intellectual property rights, copyright, proper conduct on the Internet, and safe cyber-shopping. Users of the network need to be aware of these issues to protect themselves, as well as to protect others with whom they are communicating.

Lesson Three deals with access to policy information. This lesson introduces users to the database and its format. General instructions are given about using browsers to find information on the World Wide Web and good starting places for new researchers. Each website in the database has a “content” and “cool” rating accompanying its description. The “content” rating is based on the amount of useful information a website contains, whether the information is presented in a clear and easy-to-use format, and links to other resources. The “cool” rating is based on the visual aspects of the website and the inclusion of novel applications, such as loan payment calculators.

Lesson Four describes the best ways to communicate with policy makers and regulators. Issues covered include netiquette, the proper form and content of messages sent to policy makers, and how to find the appropriate people to contact with questions, views and concerns. This lesson familiarizes users with available websites which request input on public policy decisions or regulations. This lesson strives to show the relevance of information found on the Internet in the “real world” so students and other users can understand the importance that technology can have on human activity. PolicyWeb hopes to push students farther than “using technology just to use technology” since “information without purpose may have little value” (Geyer, 1995).

Lesson Five focuses on maintaining contact and involvement in the network. An email response form asks website visitors to rate the information found in the PolicyWeb website and the format in which it is presented. There is also an open comment box in which users may voice their opinions, ask questions, or make suggestions. Users have the option of submitting the form anonymously or they may include their name, address, and email address to receive a response and to be informed of changes to PolicyWeb as they are made and to facilitate the creation of an on-line community of policy researchers and process participants.

Users may follow the lessons in sequential order or they may make use of hypertext links to jump directly to those parts of the lessons of immediate interest. The text search engine also serves to help users quickly find the information they need in the lessons. All of the lessons also include links to other sources of information on the Internet or traditional sources of information such as books and magazines.
The Database

The volume of information found on the Internet can be both a blessing and a curse. In surveys, educators complain about the difficulty of finding useful information on the Internet due to the volume of information and a lack of Internet research skills (Brauch, Gerhold, & Patt, 1996). Databases of useful World Wide Web resources help prevent “informational supersaturation” (Carvin, 1997). The PolicyWeb database was compiled to help policy researchers make their information searches on the Internet as efficient and precise as possible.

The database contains over two hundred policy research related websites on the Internet. These websites include federal and state governments, private organizations, commercial organizations, and educational institutions. Some websites included in the database are not directly related to policy analysis, but provide a tool that could be useful in policy research. Some of these websites include Internet “yellow pages,” search engines, and on-line newspapers. Users are given basic instructions on browsing the World Wide Web and using the database in Lesson Three. There is also a special “help” page that addresses using the search engine with the database.

After users enter keywords for their database search, the search engine returns appropriate resources for that query. The resource name and its “content” and “cool” ratings are listed vertically down the screen. The content ratings and descriptions are a unique features to the PolicyWeb database that set it apart from other search engines and databases. Users may then click on the websites names to go to their descriptions and hypertext links to the website. At this point, the user has the option of returning to the list or visiting the website. There are two options for going to the website. The new website can be opened in the current window or it can be opened in a new window. Some users find it easier to open new websites in a new window to avoid confusion with other websites in the list. Other users may prefer to open the new website in the current window to save time.

Evaluation

While evaluations of the website and GSAMS presentation were solicited from website visitors and presentation participants, these evaluations were mainly subjective. An undeveloped area in general is the testing of the effectiveness of using the World Wide Web as an educational resource (Brauch, et al., 1996, Trochim, 1997). We plan to test whether the PolicyWeb website actually achieves what it sets out to do—providing a convenient, easy-to-use
and understandable source of Internet and policy research information and helping users find the policy research resources they need on the Internet. We are currently in the process of creating an experimental design to test the effectiveness of the PolicyWeb website.

The benefit of web-based course work can be in student performance and/or cost-effectiveness (Trochim, 1997). In order to determine whether our website is useful in providing this information, we will need to test it against other methods of delivering the same (or similar) information. In order to test whether the method of delivery is significant, we are creating a worksheet consisting of general questions about the Internet and specific questions about policy research. One group of students will be assigned to complete the worksheet using only the PolicyWeb website. Another group of students will be assigned to complete the worksheet with a hard (printed) copy of the PolicyWeb text and database. This comparison will test the method of delivery to see if the interactive aspect facilitates student learning as we expect it will.

A third group of students will be assigned the same worksheet, but will be limited to the use of two websites, the “Learn the Net” (http://www.learntthenet.com/) website and the “VoxPop” (http://www.voxpop.org:80/index.html) website. These two websites have been chosen for their similarity in content to PolicyWeb and the fact that they are free for use to the public. This comparison will allow for substantive differences in resources to see if the information and format of PolicyWeb is significantly better than existing resources on the Internet.

Currently, the evaluation instrument is being tested by a small group of undergraduate students before the full evaluation is launched. We hope to have our data collection done by the end of spring quarter, 1998. We then hope to share our results with the research and academic communities.

Concluding Thoughts

One of the most striking revelations during the process was the speed with which technology changes. More specifically, what was innovative in 1995 was not so innovative in 1997. This is a common problem in developing educational technology and computer applications (Ehrmann, 1995). Other websites that accomplish similar goals have been up and running on the Internet for at least as long (if not longer) as PolicyWeb with more resources for their long term use and maintenance. However, we found no one website (at least at the time this paper was written) that
contained all of the information presented in PolicyWeb. Thus we do feel we have an edge by providing a convenient reference source around a policy research tool. We’re hoping that PolicyWeb will “catch on” as users spread the word about its usefulness. More presentations are planned for the future, as well as the completion of the experimental design. Over time, use of PolicyWeb should increase, at least partially due to “repeat customers” who use the website for subsequent research and course work. We also hope to be able to incorporate visitor suggestions received through the response form in Lesson Five to make PolicyWeb as useful and user-friendly as possible.

Undergraduates in our program may also be able to play a part in the maintenance and evolution of PolicyWeb. Finding new resources for the database seems to be a favorite class project for many students in our department who collected information for an upcoming “ApplianceWeb” website. Individuals who want to develop independent research projects for course credit can help with the technical aspects of the website. Projects such as these would not only benefit PolicyWeb, but would also give students tangible skills to take with them into the workforce.

This project was a grand learning experience for the whole PolicyWeb team. However, it now provides a template for the creation of similar projects for other areas of research (such as the aforementioned “ApplianceWeb”). Overall, the benefits of the PolicyWeb website will continue to increase over time as more and more people turn to the Internet for teaching, learning, and research.
References


