Web page publishing policy: Developing taxonomy for private higher education settings based on current practice

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Abstract

Web page publishing has expanded rapidly in higher educational settings as administrative, faculty, staff, and student users lobby for server space. Increasingly, web publishing policies are needed to help maintain an institutional brand and insure that civil rights are not violated. Institutions that publish or host individual web pages must grapple with issues concerning web page ownership as well as style and content compliance. An analysis of the Web publishing policies of 59 Pennsylvanian private colleges yielded results which are presented in this paper as taxonomy for web site publishing policies for higher educational institutions.

Keywords

Web page publishing policy; Web hosting; Taxonomies; Categorization

Introduction

Institutions of higher education are highly invested in the web-based promotion of their academic programs, funding more resources to this effective communications medium. However, many collegiate web pages, particularly those of individual academic departments, faculty members, and committees, were not professionally designed but were instead developed in an ad hoc manner without allocation of permanent funding to support page and site maintenance (Swanson, 2000). In addition, issues including decentralization, accountability, and academic freedom (Nicholson, 2002) as well as the allocation of human resources (Powel & Gil, 2003) contributed to weak enforcement of web content standards. Ritter, Freed, and Haskett (2005) noted that philosophical differences, lack of planning, field content requirements, or task support could explain the differences that exist between institutional subpages.

Policy governing web site creation and web page publishing may not have kept up with web site growth, especially in smaller, privately governed higher educational institutions. Unambiguous institutional web hosting policies allow administrators to present to user developers the set of procedures and principles that govern the planning, creation, and editing of web content. Since research in web content management and web content policy in higher education institutions is under-developed, the need for taxonomy to classify important elements of web page publishing policy for higher education institutional settings is emerging as institutions confront web page publishing issues.

The purpose of this investigation is to conduct a large-scale assessment of the availability and content matter of web page publishing policies for all of the private institutions of higher education as identified on the Pennsylvania Department of Education's web site. The findings of this study will have many practical implications. Those charged with web content policy interests on behalf of their institutions will benefit from learning what aspects of web publishing policy other institutions have found valuable to present to their audience of faculty, staff and student web site and web page creators. This research will contribute to the web publishing policy field literature in the context of the higher educational arena.

In this investigation, careful examination of available web page publishing policies revealed that stated points did not exemplify best practice but are highly influenced by setting factors. This led to the creation of taxonomy for web publishing policy points so that those invested in web content management of private higher educational institutions can more accurately compare web publishing practices.

Theoretical Background
Web policy creation, maintenance, and enforcement in collegiate settings are gaining ground as one of the major issues facing institutional web administrators. Nicholson (2002) argued that the employment of web publishing policies in university settings helps the institution serve its administrative function, in an effective, corporate-model approach. Diver (2007) noted that the purpose of any information security policy is to: "protect people and information; set the rules for expected behavior by users, system administrators, management, and security personnel; authorize security personnel to monitor, probe, and investigate; define and authorize the consequences of violation; define the company consensus baseline stance on security; help minimize risk; and help track compliance with regulations and legislation" (p.1, ¶ 1). Previous field literature concerning elements of web page recommended that ownership, requirements of currency or content maintenance, audience, evaluation and selection of resources, legality compliance, and data backup should be included as required policy elements (Brewer, 2002; Lingle & Delozier, 1998). Aebi-Moyo (2007) argued for the inclusion of transparency in budgeting and sponsorship, user-centered elements including accessibility and usability, and developer-centered elements including cross-platform compatibility, links policy, and a style guide.

**Student Web Pages**

Prospective employers are increasingly expecting students to have a web presence in order to demonstrate their familiarity with web publishing technology and their willingness to engage in social media relationships. Due to those potential workplace expectations as well as current coursework demands, students are increasingly requesting to use web publishing resources at their academic institutions. In some cases, students are required to create web pages as a course or portfolio requirement, with the work product increasingly tied to learning outcomes (Hensley, 2005).

The issue of web page ownership has challenged administrators in higher educational settings when considering the control of content placed on their servers as weighed against student rights and privileges. Due to either past problems with or anticipated concerns with copyright infringement, cyber-harassment, and commercialization of an institutional resource, institutions are increasingly requiring that student web pages meet certain criteria before publication (Roelants, 1997). Lack of resource support for student web page developers has been documented by researchers invested in effective page development (Hallman, 1996). Dyrli (2002) argued for policy review noting that some institutional web policies were developed before student-generated web pages became commonplace.

**Faculty Web Pages**

Research indicates that the creation of faculty web pages is susceptible to the same issues that plague student pages. The usage of a web page content management systems is increasing for the creation of faculty pages (Thoms & Thelwell, 2005), however, evidence is mounting that many institutions allow faculty users full or partial design and content control (Hess, 2002; Lennex, 2007; McGowan, 2008). Hall, Jensen, and McLean (2008) found that there is a paucity of research concerning the interaction between student users and faculty concerning departmental web pages.

In terms of policies regarding faculty web pages, a case study of a regional state university conducted by Lennex (2007) revealed that page creation, supervision, template usage, and accessibility are not mandated by the institution and are exempt from content management system constraints. Hess (2002) seemed to have similar findings regarding faculty page style exemption, noting that 35% of the studied faculty homepages did not offer a link to a department or institution site. Covey (2009) noted violations in faculty-provided links to their own restricted-access publications in addition to a discrepancy in self-archiving practices. Donovan (2009) found that creation and maintenance factors including training, support and software needs greatly impacted the quality of content on the web pages of educational department faculty.

**Institutional Response to Individual Web Pages**

The liability of publishing individual web pages has forced some academic institutions to ban student web pages or post a caveat concerning web page content (Roelants, 1997). Other institutions, promote the creation of student organizational web sites as a forum for individual participation (Beirne, Brecht, & Sauls, 2002). In addition, increased web page maintenance responsibilities have caused several institutions to either impose limitations on the number of hosted pages or decentralize operations (Powel & Gil, 2003). While libel, slander, and copyright violations have been documented as institutional concerns for individual pages (Jacobs, 2010; Zirkel, 2001), resource allocation is increasingly becoming an important factor as web page content employs more interactive features with greater bandwidth constraints (Danahe, Jazdzewski, McKay & Hudson, 2005). In addition, the inclusion of individually created web pages contributes to difficulties in maintaining a consistent institutional appearance and site navigation (Powel & Gil, 2003). The employment of the institutional web site and sub-organizational pages to reinforce the institutional brand is becoming increasingly important (Leigh & Best, 2002; Tixier, 2001) as higher educational institutions lobby for dwindling funding and enrollment resources.
Web hosting taxonomies

An extensive search revealed no existing field literature that presents the elements of either web publishing or web hosting in a taxonomy form; however templates have been created for web hosting and related policies. The Internet Acceptable Use Policy Template (2011) describes 18 user-perspective categories: policy statement; purpose; scope; definition; risks; policy application; institutional purpose for providing the service; what you should use your service for; personal use of the service; account management, security and monitoring; things you must not do; user responsibilities; manager responsibilities, whom would you ask questions of; policy compliance; governance; review and revision; and references. In addition, web publishing policies that have been submitted to a document retention site for purposes of community sharing indicate that collegiate web publishing policies might incorporate information concerning: the policy purpose, a description of the collegiate web environment, web training, identification of contributors, related policies, related standards, and comprehensive guidelines concerning design elements and principles, advertising, privacy, copyright, metadata, development tools, site management, guideline departures, institution name and logo usage, photograph usage, glossary of terms, and a publication checklist (Knowledge Media Division, 2005).

Method

The logical and objective methodology of content analysis has been shown to effectively analyze web site content in order to understand the meaning that developers wish to convey (Stacks, 2002). This research methodology is used to determine the presence of certain words, concepts, phrases, or sentences within documents or artifacts to quantify presence in an objective manner.

Sample

Using the Pennsylvania Department of Education web site, their list of colleges and universities designated as private institutions was compiled into a list of 66 institutions, all of which could be categorized as traditional, liberal-arts institutions. Institutions categorized as private, but have a singular focus, such as for-profit business and art schools as well as rabbinical colleges and theological seminaries were excluded due to researcher expectations that findings gathered from these types of institutions would divert the theme focus. Therefore, the data set was purposively selected to reflect a complete collection of institutions of a particular type in the private, higher educational arena of the Commonwealth of Pennsylvania. This sampling strategy was chosen because the researcher believes that private Pennsylvanian colleges can be considered representative of national trends in web policy issues due to the wealth of web content and content developers at these institutions. It should be noted that the data set was gathered during the month of August, 2010.

Procedure

The researcher believes that Pennsylvania can be considered representative of national trends in web page publishing issues for private higher educational institutions due to the diversity of type, size and focus of the institutions. Each institution's search function was employed to locate all pages that refer to web page creation, web page hosting, and web page publishing policy. All components of a web creation and publishing policy were examined to determine significant themes. The location and availability of the policy was also noted. The terms "web page creation", "web page hosting", "web hosting", "web page publishing", "web publishing", "web page maintenance", "web policy", "web page policy" and "web page" was used at each institutional site to find all relevant pages. When the policy was located, it was saved as a bookmark for reference purposes. In addition, qualitative findings regarding the location of the web publishing policy within the institutional Web site was gathered and sub-grouped quantitatively as themes emerged. Qualitative findings regarding innovative or outlier features was also gathered.

The sample was analyzed to identify recurrent themes. Based on a set of web policy indicators grounded in current research, the data analysis procedure of theoretical coding was employed, with the data set coded by employing a frequency count to record the occurrence or non-occurrence of items within themes. Strauss and Corbin (1990) developed the theoretical coding procedure from Strauss' earlier work and noted the importance of interpretation as a decision point in data collection. A code was attached to an empirical item and then compared to other web policy elements and elements from earlier cases in order to form groups of similar concepts. Flick (1999) noted that the abstract development of theory should follow from this detailed coding process. To finalize the data file, the meaning of the themes was clarified so that if some themes overlapped, they would be merged, while additional themes might be developed if needed. All themes were reviewed twice by the primary investigator to determine theme consensus representative of the content presented in the web policies. To ensure reliability, two passes coded the identified content themes independently. This exploratory case design is an appropriate research design when the phenomenon of interest is imprecise, is not clearly discernible from its context, and employs multiple interacting constructs (Gall, Gall & Borg, 2005). The exploratory approach discovers an investigative arena, identifies constructs, and generates working hypotheses for use in future research (Yin, 2003). Study findings were related to conceptual and empirical literature after the conclusion of the data collection in order to prevent the formation of inaccurate or biased hypotheses.
Findings

Using the research questions as a framework, the researcher will present quantitative findings that explore many aspects of web hosting policy. For all research questions, the percentage of sample policies demonstrating the feature is documented. Santos and Clegg (1999) noted that the frequency count is an important tool for inferring the relative importance of each variable.

Findings of Policy Accessibility

Regarding web policy availability, 53 of the 66 (89%) institutional web sites of Pennsylvanian private colleges offered some sort of policy regarding web publishing, with 25 of the 53 (47%) offering a dedicated web publishing policy. The majority of sites (53%) employed an acceptable use or terms of use policy that specifically referred to web page publishing. For the 13 (19%) web sites that did not offer a web page publishing policy, lack of web availability does not necessarily indicate lack of policy. Since all of the institutions will only host pages created by authorized users such as faculty, staff, administration, and enrolled students, there should be no expectation that this policy needs to be accessible to the general public, although the lack of public, web-based availability of this type of policy could be perceived by users as less user-friendly (San Francisco State University, 2001). Internal policies can effectively be located with the employment of firewalls on institutional intranets or servers (Curtin, 1997), a recommendation that at least two of the 13 unavailable web sites (3%) employed. One reason to allow the general public to view a web publishing policy would be that all information technology policies could be hosted together on one policies page. Field literature seems to confirm the importance of linking relevant material; participants in Poock's (2006) study highly ranked the accessibility of relevant links on an institutional site over navigation back to the institutional homepage. In fact, 88% of the web sites of this study with a dedicated web hosting or publishing policy offered that policy on a policies page located as a link on what serves as the institution's information technology office.

The vast majority of dedicated web page hosting or publishing policies of Pennsylvanian private colleges were presented as a web page with three of the three policies (12%) presented as a PDF file, a surprising finding given the 2005 recommendation by the International Organization for Standardization that PDF files by employed for the long-term preservation of electronic documents (International Organization for Standardization, 2005). Six of the policies that were displayed as a web page also offered links allowing the policy to be either emailed or printed. One of the institutions offered their policy for viewing as a Word document and one institution allowed an option for downloading the policy on the web page.

A surprising finding of this investigation concerned the naming of the policy itself. A large majority of institutions with dedicated web page hosting or publishing policies (68%) employed a generic name such as "web policy" instead of a more specific name such as "web page hosting policy" or "web publishing policy". Web design style guides recommend the usage of specific link names to clarify the meaning of content (Wright State University, 2011).

Another surprising finding was that a large majority of the available policies (50 of 66, 75%) address web publishing issues only. In fact, only one policy (<1%) explicitly addressed web hosting issues by employing a suggestion regarding the presentation of information to an audience of prospective employers. To provide a context for the reader, an institution might host a web page that violates their institutional web brand, but showcases a student's web design skills or allows a student to voice a particular perspective. A page that is accepted for web publication typically must conform to design and content standards.

Findings Regarding Policy Purpose

Regarding different usages of published web pages, seems to be an important concern of policy crafters as 14 (26%) of the 53 institutional web sites of Pennsylvanian private colleges specifically noted that all published pages must be employed in the educational, administrative, and business concerns of the college. 15 of the 53 (28%) institutions specifically ban commercial advertising on institutional web pages. Only 5 of the 53 institutions (9%) have an explicit mission or purpose section in the web publishing policy. For 12 (22%) of the institutions, the importance of web pages as a communication tool or the use of web pages to facilitate communication was specifically noted in the web publishing policy. Five of the 53 institutions (9%) addressed institutional marketing and the importance of establishing an institutional brand in the purpose section of the web publishing policy, which is surprising given Heaney, Ryan, and Heaney's (2010) arguments concerning the importance of branding for private, higher educational institutions.

Findings Regarding Ownership

Regarding web page ownership, 16 of the 53 (30%) institutional web sites of Pennsylvanian private colleges assign responsibility to web page creators and maintainers in the web publishing policy, however, none of the policies consider the individual developer to be the web page owner. In fact, 7 of the 53 institutional policies (13%) explicitly state that they own all published pages, with one institution claiming that they are the web
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page publisher. While none of the 53 policies explicitly name the department, office, student group or other sub-organizational structure as the owner of any web pages or sites, 15 of the institutions (28%) state or imply that web pages falling under the department or group hierarchy must be approved by that sub-organization. 14 of the 53 institutional policies (26%) address the delegation of responsibility for web page creation and maintenance to a department, office, student group or other sub-organizational structure, which three of the policies (<1%) name as a web coordinator. One policy names these individuals as a web liaison and states that person must attend monthly meetings. Only 8 of the 53 institutional policies (15%) either identify the web page approving parties or describe the approval process for web page hosting.

Twelve of the 53 institutional policies (23%) specifically address ownership of student, individual, or independent pages. Field literature indicates that this number might not be considered low in that many institutions do not host student pages due to liability issues. However, case studies of web pages that reflect problems associated with free speech and academic freedom (Nicholson, 2002) may drive more and more institutions to consider the explicit handling of individual ownership in their web hosting or publishing policy. Ten of the 53 institutions (18%) dictate in the web publishing policy that page ownership be indicated on the web page or that a page must employ a disclaimer statement such as "The views on this page are those of the [office, department, faculty, staff or student] and do not necessarily reflect the policies of XYZ College". Of the remaining 43 institutions, 7 institutions use their Acceptable Use policy to disclaim statements made on individual web pages.

Findings Regarding Web Page Style and Enforcement

Eleven of the 53 institutional web sites of Pennsylvanian private colleges (20%) employ their web page hosting or publishing policies to require a specific format or page template for the creation of new web pages, while the policy of one institution recommends template usage. Only 3 of the 53 institutions (<1%) address the use of a web content management system, which is surprising given the expanding number of colleges that have adopted a content management system to update web pages (Collins-Brown, 2006). Three of the 53 institutions (<1%) use their web publishing policies to reserve the right to make minor spelling, grammatical, and formatting changes such as link updating and removal without owner approval. This surprising finding may be due to user expectations that web pages will not be published if they contain minor mistakes.

Non-compliance or web page violations is addressed by 30 of the 53 (56%) of the web publishing policies, which is not surprising given Nicholson's (2002) findings that policy enforcement was one of the six most troubling aspects of university web site management. Regarding conflict resolution, numbers fall significantly with only 8 of the 53 institutional policies (15%) having clauses that address grievance procedures, a surprising finding given that Brewer (2002) recommended the addition of a grievance procedure as one of the seven essential elements of an organizational web policy. Fourteen of the 53 institutional policies (26%) specifically ban web page elements that significantly impede system resources, however, only one policy includes examples such as streaming video. It is reasonable to assume that student web page developers may be unfamiliar with the impact that certain web page elements have on network resources, so the inclusion of examples would serve illustrative purposes instead of serving as an exhaustive list of banned items. Only 3 of the 53 institutions (<1%) address Americans with Disabilities Act compliance in their web page publishing policy which is surprising given numerous field recommendations supporting web page accessibility in higher educational settings (Anderson, 2004; Bradbard & Peters, 2010).

Forty-three of the 53 institutions (81%) use their web hosting or publishing policy to address issues such as privacy, free speech, defamation, intellectual property, and copyright infringement. Seven of the remaining 10 institutions have developed separate privacy, copyright and intellectual property policies that encompass all collegiate tasks, including web page creation. The policies of the remaining three institutions may be hidden from public access due to the employment of a collegiate intranet. This high compliance indicates that higher educational administrators have heeded the call for policy in field literature (Richards, 2008; Tsesis, 2010).

The importance of timeliness, reliability, completeness, and currency in hosted web pages is dictated by 10 of the 53 (18%) web publishing institutional policies. Two policies mandate modularization of information by banning the duplication of published information, such as course descriptions in a college catalog, which is endorsed by Cadenhead, Chen, and Cook (2006) due to the dynamic nature of web content and the high number of errors when duplicating or failing to update information.

Regarding the web publishing policy metadata, 21 of the 53 institutions (40%) include identifying information for the web publishing policy document such as author(s), approval date, approving body, etc. Two of the web hosting or publishing policies also include within the policy a history of the institution's service of providing web pages to its audience. Two policies name the web committee members and identify those responsible for web content by department; list committee responsibilities; and terms of the committee. This relatively low number of participates seems to reflect field trends, with some literature advocating for the web page availability of committee information and supporting documents for organizational transparency (Steel-Fisher, 2005).
Only 10 of the 53 institutions (19%) require specific items such as an institutional logo, and links such as a home page link to be included on published web pages, a surprising finding given Aebi-Moyo’s (2007) arguments that a web publishing policy should “detail responsibilities; give guidance on what content should appear on the Web; and even outline how that content should be written” (¶ 2).

One policy dictated mandatory links for departments. An additional 17 institutions (33%) have either internal web design style guides or recommendations or provide a link to an external web style guide. Three of the 53 policies (<1%) included a link within the policy to HTML tutorials.

**Outlier findings**

Eleven of the 53 institutional web sites of Pennsylvanian private colleges (21%) employ their web publishing policy to define either content management system or web hosting or publishing terms. Three of the 53 institutions (<1%) include clauses within the web publishing policy confirming links to social media sites. Two of the web hosting policies contains links to other institutional technology policies.

One of the 53 institutions insures web publishing policy viewing by placing the policy within a link for individual users to create a new web page. Users must consent to the policy before the web page will be hosted. None of the other 52 institutions required signed or acknowledge acceptance of the web publishing policy, although 20 of the policies implied that policy acceptance was required for all published pages. In addition, while all of the available Acceptable Use policies of this study claim that web resource users must be familiar with Acceptable Use policy, it is reasonable to suggest that users might not consider policy existence when reading inflammatory or derogatory opinions on web pages published by an institution and perceive this information to be reflective of the institution. This study's findings of an additional six policies which indicate that student or individual web pages must meet standards set forth in a student-based honor or behavioral-based policy would be in line with recommendations by M86 Security (2010) regarding the management and enforcement of the acceptable use policies.

**Discussion**

This study had several objectives, to: (1) present the findings of the availability and content of the web hosting or publishing policy Pennsylvanian private colleges; (2) to create taxonomy for classifying elements of web publishing policy. This section provides an analysis of the web publishing policy elements and other relevant observations.

After an analysis of the study findings, it seemed that the desired clauses identified by the web publishing policy developers could be considered to vary along two main scopes. The first is that policy developers where concerned with maintaining a particular look and feel of the institutional site, so standards that enforced that goal were highly valued. For example, it is clear that mandating specific links or template use will promote an institutional brand. The second scope that developers seemed concerned with was promoting the use of the web site for promotional purposes, so banning advertisements or commercialized use of web pages seemed to be an important goal. Further due to the high percentage of available policies, it seems that the web publishing policy developers value transparency even for policies that do not need to be made available for public consumption. Researcher expectations that style considerations would play an important aspect of web publishing policy were not met; perhaps due to the growing usage of web content management systems, user usage of web page templates and style guides, and user expectations of style compliance. Finally, due to social networking trends, expectations of greater individual web page investment make it likely that higher educational institutions will continue to grapple with web page ownership issues as web page content becomes increasingly valued as an intellectual commodity.

Due to study findings of the neglect of web hosting issues, those invested in web policy development must begin to examine how to evaluate and create procedures and policy for the handling of different types of user-produced web content. The mission of the web site as a promotional tool must be balanced against increasing pressure of faculty and student users to employ the institutional web site as a forum for promoting discussion, or as a medium for promoting individuals and individual-based issues.

**Conclusion**

Many institutional web site administrators make policies that describe the site's web page publishing practices publically available. However, in spite of the many guidelines for the content and layout of these policies, policy content remains inconsistent across the higher educational spectrum. Sites which do not host student pages have little or no need to address the use of individual web pages, so web publishing policies are difficult to compare without consideration of the domain. Although institutional investment in web publishing and hosting policies is clearly a positive step in policy transparency and enforcement, improving policy content to reflect the issues of web page ownership, web publishing and hosting issues, and developer rights will facilitate the creation and maintenance of web pages that reflect the needs of institutional stakeholders. The
taxonomy that was developed as a result of study findings provides an effective unit for measuring and comparing web publishing policy for private institutions of higher education.

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