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Civic engagement, pedagogy, and information technology on Web sites for youth

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Abstract

Scholars of political socialization are paying increasing attention to how the Internet might help cure the civic disengagement of youth. This content analysis of a sample of 73 US-based civic Web sites for youth introduces a framework for evaluating Web sites' strategies for fostering active communication for citizenship. We offer the first systematic assessment of the extent to which a broad range of Web sites aims to develop young people's abilities to use information and communication technology (ICT) as a vehicle for civic participation and to engage with ICT as a policy domain that encompasses issues (such as freedom of speech and intellectual property rights) that shape the conditions for popular sovereignty online. The study finds low levels of interactive features (such as message boards) that allow young people to share editorial control by offering their own content. In addition, few sites employ active pedagogical techniques (such as simulations) that research suggests are most effective at developing civic knowledge, skills, and participation. We also find little attention to ICT policy issues, which could engage budding citizens in debates over the formative conditions for political communication in the information age. We conclude with suggestions for civic Web site designers and hypotheses for user studies to test.

Introduction

Research on American youth's civic knowledge, attitudes, and participation offers many indicators of young people's disconnection from civic life since the 1950s. We need not engage in a moral panic, accusing all youth of shunning public life, or scapegoat youth for larger concerns about the civic disengagement of their elders, to be concerned. The dramatic growth of formal schooling of Americans since World War II has not increased students' level of political knowledge, which is consistently lower than adults' (Delli Carpini & Keeter, 1996; Galston, 2001; Pew Research Center, 2004a). Research on youth attitudes reveals that, compared to prior generations, today's youth are less interested in politics (Galston, 2004), less likely to express trust in their fellow citizens (Keeter, Zukin, Andolina, & Jenkins, 2002), and less inclined to perceive citizenship as involving duties (such as voting or donating money) and not simply rights (Kurtz, Rosenthal, & Zukin, 2003). Although youth are more likely than their elders to serve as community volunteers (Lopez, 2004), young people often characterize volunteering as an alternative, rather than a gateway, to participation in electoral politics (Galston, 2004). Youth voting rates in presidential elections declined from 1972 to 2000, and despite a spike in youth voting in 2004, less than half of eligible 18-24 year olds cast a ballot (Lopez, Kirby, Sagoff, & Herbst, 2005). Youth are also consistently less likely than their elders to engage in collective action targeting the public policy process, such as by working on a campaign, contacting a public official, joining an organization that takes public stands on issues, or joining a political club or organization (Delli Carpini, 2000).

In response to these declines in youth civic engagement, hundreds of World Wide Web sites have been created to link youth with opportunities to volunteer, vote, and join in many other types of civic participation. In this article we briefly review the widely discussed potential of the

Internet to reengage youth. Drawing on the literature on new media as an agent of political socialization, Internet usability, and civic education, we then derive a framework for evaluating how well the content of Web sites that aim to connect the young to civic life is designed to develop civic knowledge and skills. Through content analysis, we examine the extent to which a sample of these sites exploits the Internet's interactive features and employs active pedagogical techniques that research indicates are most effective in civic education. We also address the extent that sites integrate policy issues raised by information and communication technology (ICT).

This study proceeds from Selwyn's (2002) insight that using the Internet most effectively to engage youth requires developing both their ability to use ICT as a *vehicle* to learn about and participate in civic life, and the capacity to engage with ICT as a *topic* or policy domain. ICT is becoming a central vehicle for civic education and participation because voting and communicating with government, and coordinating political action, community service, and philanthropy increasingly requires facility with ICT (Cornfield, 2004). Emerging citizens who are not comfortable learning about and taking part in public life online will be disadvantaged. In addition, there is growing evidence that the Internet has proved to be more fertile ground for building young people's knowledge of and engagement in public affairs than many traditional media (Anderson, 2003; Jennings & Zeitner, 2003; Lenhart, Madden, & Hitlin, 2005; Levine & Lopez, 2004; Pasek, Kenski, Romer, & Jamieson, 2006). Yet civic engagement of youth should also include informed involvement in ICT issues, which have received less attention in scholarly circles. Law, policy, regulation and institutional decisions that shape users' access, freedom of speech, property rights, and privacy largely determine citizens' ability to exercise their rights and responsibilities online (Lessig, 1999). To paraphrase Benjamin Franklin's famous comment

about the United States Constitution, we have created an online republic – if we can keep it. Citizens who are ignorant of ICT policy may be increasingly unable to protect and influence the bedrock conditions that support their ability to learn and communicate about all public affairs.

The Internet's Potential for Civic Engagement of Youth

Delli Carpini (2000) summarized the reasons why the Internet has been proposed as an important route to reengage youth both because of its ability to facilitate the *supply* of civic knowledge and skill-building and the *demand* for these by youth. He noted that the Internet has been widely praised for increasing the ability of political elites and organized groups to reach youth because of the medium's low cost, speed, scope, and ability to form far-flung communities of interest as well as geographically-based affiliations. For youth, the medium might lower the costs of civic engagement, improve its quality, increase the types of activities engaged in by those who are already connected to public life, and perhaps introduce the unengaged to civic participation.

On the supply side, civic media, much of it created by civil society organizations, has become a significant supplement to school-based efforts. The number of civic education courses in public schools has declined since the 1960s because of school boards' fears of treating controversial issues, budget cutbacks, and replacement by classes preparing students for high-stakes testing in core academic areas (CIRCLE & Carnegie Corporation of New York, 2003). Nonprofit organizations have stepped into the breach to take a leading role in developing the formal civics curriculum and informal learning by developing programs for service learning, electoral participation, citizen action, and deliberation (Johanek & Puckett, 2005). These efforts often include a Web site component.

Civic media also may strengthen the abilities of institutions that previously mobilized youth as well as new civil society actors to engage youth in informal learning and recruit their participation. Some have argued that the Internet will especially lower barriers to the political mobilization of those (like youth) who are less connected to the institutions that traditionally organized and motivated adult Americans' political activity, such as business, professional, and occupational memberships (Bimber, 2001). Institutions such as parties, unions, and ethnic associations, which have been losing their power to motivate youth civic action (CIRCLE & Carnegie Corporation of New York, 2003), might also benefit from the Internet. Some have noted that the Internet strengthens the ability of advocacy groups to organize collective action, pointing to successful online issue campaigns that have involved large numbers of youth among their constituencies, such as efforts against exploiting sweatshop labor (Anderson, 2003).

On the demand side, research on youth Internet usage offers some hope for the medium's potential for engagement. Youth are more likely to use the Internet and computers daily than their elders (Iyengar & Jackman, 2004) and their introduction to the Internet coincides with a key moment in their political socialization. At the same time that almost all American youth are getting online they are forming the political habits and views that will shape them as adults (Torney-Purta & Amadeo, 2003). Not only are 94 percent of youth now online by twelfth grade, but youth begin spending more time online and using the Internet in more ways on a regular basis during their teenage years, including for news and political information (Lenhart, Madden, & Hitlin, 2005). For youth, the Internet can provide a "free space" for low-risk exploration of civic identities and alternatives to mainstream views across geographical and social group boundaries (Flanagan & Gallay, 2001).

Youth are not simply using the Internet for entertainment but are turning from old media to new media for news and information, including political news, in ways that can build civic knowledge (Lenhart, Madden, & Hitlin, 2005; Levine & Lopez, 2004). According to national surveys conducted in 1999-2000, younger people were already more likely to go online for news than their elders, those 18-29 years old who used Internet news sites displayed higher levels of political knowledge, and youth who followed politics more closely were especially likely to have more political knowledge if they went online for news (Delli Carpini & Keeter, 2003). And the number of young people going online for news is increasing: in 2005, 76 percent of teens got news online, a 38 percent increase from 2000 (The Pew Internet and American Life Project, 2005). In the 2004 U.S. presidential election, 28 percent of 18-29 year-olds got most of their information about the election from the Internet, an increase from 22 percent in 2000, and a higher proportion than any other age group (Pew Research Center, 2004b).

Other studies have found that informational uses of the Internet are associated with positive civic attitudes and behaviors among youth and young adults. Shah, Kwak, & Holbert (2001) found that 18-34 year olds were more likely than older generations to search for information on the Internet (versus relying on television or newspapers) and use email. Although members of all generations who availed themselves of these informational uses scored higher on interpersonal trust and participation in several civic and community activities, these civic benefits of Internet use were strongest among Generation X. Jennings and Zeitner (2003) also found youth were more likely to use the Internet for political purposes than their elders, and found a positive association between such usage and political interest, in a comparison of surveys of the high school class of 1965 and their offspring (with a mean age of 23) in 1997. More recent surveys find that regular use of the Internet for information gathering by youth is

positively associated with participation in extracurricular voluntary associations and community

service, and that the Internet (along with books) makes the greatest contribution of any media to

increased levels of civic activity and awareness among youth (Pasek, Kenski, Romer, &

Jamieson, 2006). It is not surprising that large majorities of young people include new media in

their own definition of what it means to be political, incorporating actions such as sending an

email, signing online petitions, and writing blogs into their conception of political activity (John

F. Kennedy School of Government, 2005). In sum, youth both appear to value the Internet as a

civic tool and to use it to boost their political knowledge and participation.

<div style="text-align:center">Interactive Features and Active Pedagogy: The Missing Links?</div>

Although prior research indicates that Internet information-seeking is associated with

building young people's political knowledge, interest, trust, participation in voluntary

organizations, and community service, we still know little about what *kinds* of Web sites are

most effective at fostering these connections. For example, Lupia & Philpot (2005) designed a

study that instructed participants to learn about presidential candidates by examining one of a

group of news and political sites to which participants were randomly assigned. Results showed

that 18-24 year old participants' evaluations of some sites' effectiveness and efficiency for

political learning indicated that youths' preferences for political site design or content differs

from their elders, but the study offered no evidence of what features were more desirable to

youth.

Even before the explosion of youth interest in social networking Web sites such as

MySpace, Facebook, and YouTube, usability research had demonstrated that young people are

especially attracted to sites with interactive features, including online quizzes, forms for

providing feedback or asking questions, online voting, games, features for sharing pictures or

<div style="text-align:center">7</div>

stories, message boards, forums for offering and receiving advice, and features for creating one's own Web site or otherwise adding content (Nielsen, 2005; Weigold & Treise, 2004). Internet researchers (e.g., Bucy, 2004) often distinguish between two types of interactivity. *Content* interactivity allows site users to control the selection and appearance of editorial content without directly interacting with another human being, such as by creating a personal version of a news site, finding one's own path through a series of hyperlinked documents, participating in online polls, searching archives, and so on. *Interpersonal* interactivity involves human-to-human communication via the Internet, including email, instant messaging, Internet Relay Chat, message boards, listservs, multiplayer games, and the like.

However, the scant research on <u>civic</u> Web sites for youth, as well as studies of civic-related sites for all ages, suggest that these sites have been slow to take full advantage of the medium's potential for interactivity in ways that might boost engagement further. These studies have found that sites support especially low levels of interpersonal interactivity compared to content interactivity. For example, Montgomery, Gottlieb-Robles, & Larson (2004) conducted a study that identified and categorized over 300 sites aimed at involving American youth in a broad range of civic activities. Although the study did not systematically define or count the number of interactive features on these sites, it concluded that many of these sites were more likely to offer information about organizations and opportunities for offline engagement (so called "brochureware") than to provide online activities that train youth in civic skills or allow for participation via the Internet. The researchers noted that "most civic websites make minimal use if any of games, quizzes, simulations, collaborative-learning projects, and other activities that tap the Internet's capacity for interaction" (p. 128). Youth voting sites may be more interactive than other civic sites for youth. Studies of 22 sites designed to boost voting among youth in the

2002 election (Bennett & Xenos, 2004) and 35 such sites in the 2004 elections (Bennett & Xenos, 2005) found an increase in the percentage of sites offering information about voter registration, offline political events and other opportunities for participation, as well as interpersonally interactive features such as message boards, blogs, interactive polls, and the ability to submit one's own links. Yet even in 2004 fewer than 55 percent of youth voting sites included any of these interactive abilities.

Similarly, studies of civic sites aimed at all ages have found little opportunity for interpersonal interactivity. Studies of newspaper and television news sites (Bucy, 2004; Oblak, 2005) have found that few offer opportunities for discussion among readers, and between readers and journalists, which might democratize the news agenda. Government sites, despite some experiments in citizen participation such as online public consultations that allow citizens to suggest or comment on policy issues, have been more likely to provide a one-way flow of information than to offer opportunities for substantive interaction between citizens and government, or to elicit citizens' participation in political processes (Coleman & Gotz, 2001; Musso, Weare, & Hale, 2000). Until the 2004 elections – when Democrat presidential candidate Howard Dean's campaign introduced blogs (online campaign journals to which the candidates' supporters could contribute ideas) and "meetups" (face-to-face meetings of supporters coordinated via the Web) – political candidates' sites rarely offered these kinds of features that can foster deliberation between candidates and voters or between voters themselves (Kamarck, 1999; Bennett & Xenos, 2004).

Young people's preferences for more interactive Web-based features echo previous research in the field of civic education, which indicates that traditional, passive learning techniques such as memorization and recitation tend to be ineffective in the classroom. Early

research found that although levels of civic engagement closely correlated with years of education, student knowledge and participation were boosted little from civics classes themselves, in part because they employed passive learning methods (Johanek & Puckett, 2005; Niemi & Junn, 1998). In addition, studies of civics textbooks (Anyon, 1978) and national content standards (Gonzales, Riedel, Avery, & Sullivan, 2001) have found that they rarely encourage active political participation. Research on social studies textbooks, which also feature prominently in the civics curriculum, has found that when these books encourage political participation they advocate individual actions (such as voting) more than collective responses to public issues (Avery & Simmons, 2000/2001; Strachan, Hildreth, & Murray, 2004).

Recent scholarship finds a host of active teaching techniques to be more effective for increasing civic knowledge and participation in the classroom (CIRCLE & Carnegie Corporation of New York, 2003; Galston, 2003; Niemi & Junn, 1998; Kahne & Westheimer, 2003). These techniques include fostering youth's abilities to express opinions, take part in discussion, participate in public life, practice civic problem-solving or decision-making, and engage in group learning, project-based learning, and simulations of real-world civic events.

However, active pedagogical techniques and interactive features are not identical, so both aspects of sites must be studied. The research cited above has focused entirely on measuring interactive features alone, which may be necessary but not sufficient for civic learning. For example, a site may have a message board that is so little used that it fails to foster discussion and group learning, or an online game that is no more than a test of reflexes rather than a rich simulation of an election. Conversely, a site may cultivate active learning yet fail to take full advantage of the Internet's capabilities by employing interactive features. For example, a site may describe in detail how to participate in public life by organizing an issue-based campaign in

one's community yet not include a message board where users can share their own campaign materials and strategies.

The few prior studies of civic sites for youth have either not measured interactivity systematically or been focused only on sites about voting. The importance of interactive features for attracting youth to Web sites and the effectiveness of active learning in civics education suggest that both interactivity and active pedagogical techniques are central measures of the potential for sites to engage youth in civic learning and participation.

The Relevance of Information and Communication Technology for Civic Life

Although researchers have begun to study the interactivity of Web sites, none has yet examined whether sites that aim to teach and inspire youth to play active roles in society address policy issues related to ICT itself. We argue that it is important for sites to do so for the following reasons: 1) legal, political, regulatory, and institutional choices about ICT issues set the parameters of informed and active citizenship; 2) civic educators have recognized the growing significance of these issues to the curriculum; 3) this policy domain has increasing importance in the political system; 4) the public demonstrates significant concern about these issues; 5) these issues represent a promising gateway to further civic engagement for youth.

First, the policy domain we are calling ICT issues is not a newfangled invention of the information age, but a collection of concerns long common in all democracies and that are now being extended to the Internet. These issues principally include, but are not limited to, access to information, freedom of speech, intellectual property, privacy, security, and access to the ballot. Popular sovereignty has been shaped by these issues for centuries and will increasingly be influenced by how they are resolved in relation to cyberspace. For example, current debates over access to information, especially Internet access in schools and libraries to close the digital

divide, reflect classic concerns about how education can foster equal opportunity to participate in the economy and politics. Free speech and intellectual property rights have always influenced citizens' access to the range of viewpoints and self-expression about public life, and will continue to do so online. Rights to privacy and security, including on the Internet, shape citizens' abilities to trust in government and to explore and express unpopular views without fear of public condemnation or discrimination. Debates over the reliability of electronic voting technology emerge from historical concerns over the reliability and fairness of the electoral system.

A second rationale for examining these issues can be traced to educators' growing concerns about boosting citizens' technological and media literacy. The increasing technical complexity of contemporary policy issues and growing reliance on policy experts to resolve them has raised fears that an uninformed public is incapable of holding technical decision-makers accountable (Collingridge & Reeve, 1986; Stanley, 1978). In response, educators have called for greater attention to preparing youth for informed participation in the many technology issues that affect them (Jenkins, 1999). In the 1990s, these concerns motivated organizations concerned with technical education to define educational standards for ICT fluency or literacy (International Technology Education Association, 2000; National Academy of Engineering, 2002; National Research Council, 1999), as well as information or media literacy (American Association of School Librarians & Association for Educational Communications and Technology, 1998; National Communication Association, 1998). These efforts were justified in part by the need to prepare students to act as informed citizens in technology and communication policy debates.

Third, the political system is also paying more attention to ICT issues and how they connect with other issues. Mueller, Kuerbis, & Pagé (2004) reported that from the early 1960s to the late 1990s the ranks of ICT-related public interest advocacy organizations increased about sixfold, and the number of commercial or professional organizations lobbying government on ICT issues roughly doubled. The same study found the number of Congressional hearings on ICT issues exploded from six in 1969 to 117 in 2000, and in the 1980s and 1990s hearings on these issues far outpaced those on topics such as human rights, civil rights, and women's issues. The focus of ICT hearings broadened considerably over this time period as single-issue hearings (on broadcasting policy, for example) gave way to more hearings that explored the impact of the Internet and other media on issues such as privacy and freedom of information.

Fourth, there is significant social interest in the influence of ICTs. Although these issues do not rank highest in polls about what Americans perceive to be the most pressing problems facing the country, they are not unrelated to the most frequently mentioned concerns of youth and adults, including jobs, the economy, and education (Young Voter Strategies, 2006). For example, access to the Internet, especially to broadband service, is increasingly necessary to participate fully in education and the economy. Furthermore, when asked about ICT issues directly, large numbers of adults report being concerned about them. For example, 44 percent of Americans think computerized voting systems are "unreliable," and almost three-fourths support a paper trail of voting records (Weir, 2004). Fifty-seven percent of adults nationwide worry somewhat or a lot that computers and technology are being used to invade their privacy, up from 41 percent in 2000 (ABC News/Washington Post Poll, 2005).

Finally, we argue that ICT policy issues offer promising routes to engage youth in ethical deliberation, community volunteering, and organized political action because communication

policy touches their lives directly through their own characteristic media usage. For example, thanks in part to federal subsidies for Internet access in public schools and libraries, the current generation is the first to have grown up in schools connected to the Internet. It is also the first generation to emerge as voters amidst wide experimentation with electronic voting machines. Contemporary youth have also grown up accustomed to being able to share music and other media files online, yet have become the main target of attempts by publishers to prosecute copyright violations.

Research Questions

Among the recommendations of Montgomery et al., (2004) is that scholars "develop criteria for judging websites as useful to and appropriate for programmatic efforts to promote civic engagement" (p. 128). Such research would also fill a larger gap identified by educators in research on the state of civic education pedagogy and curricular materials in general (CIRCLE & Carnegie Corporation of New York, 2003). In this article, we propose two sets of criteria that prior research has not yet examined: First, that civic sites for youth should take advantage of the Internet's interactive capabilities to employ active pedagogical strategies that educational researchers have found to be successful at fostering civic knowledge and participation; and second, that these sites ought to address the growing importance of ICT policy issues, even if they do so indirectly by considering them in relation to issues central to the organization's mission.

Although sites' performance on including interactivity, active pedagogy, and ICT policy issues may vary according to several factors, we see three as especially worthy of study. First, sites may differ by type of ownership (commercial, government, or nonprofit), given longstanding concerns that commercial media are less likely to provide the kind of content

needed for citizenship because doing so conflicts with the goal of profit maximization (e.g.,

Baker, 1994) and the poor performance of government sites in past studies of their interactivity.

Second, sites may vary according to their editorial control (by adults, by youth, or by both adults

and youth) because youth and adults may emphasize different issues and learning strategies.

Third, sites may differ based on whether they are designed to foster different types of civic

engagement because these goals may direct site designers' attention to different issues and

learning strategies.

Given the paucity of research on civic media for youth, we pose broad exploratory

research questions rather than hypotheses, asking to what extent civic youth Web sites:

1. Employ active pedagogical techniques that research suggests are effective in civic

education?

2. Include features that permit interaction?

3. Introduce youth to policy issues related to ICT itself?

4. Differ in their inclusion of active pedagogy and ICT policy issues based on ownership,

age of those responsible for editorial content, or type of civic engagement emphasized?

Methods

Sample

Educators have engaged in a broad debate over the type of citizenship that schools should

foster and thus over the forms of civic engagement that instruction should prepare students to

undertake (Niemi & Junn, 1998; Westheimer & Kahne, 2004). Similarly, there is no consensus

on the definition of civic engagement among scholars of political socialization, whose initial

conceptions of engagement have been critiqued for identifying civic activity too narrowly with

participation in electoral politics and for defining political socialization as inculcating support for

the political system rather than critical examination of it (Buckingham, 1997). Because of these criticisms and the lack of agreement over what young citizens need to know or do, we defined engagement to encompass a wide range of civic activities (see Table 1) and sought sites that fostered each of them for our sample. These categories are adapted from Montgomery, et al. (2004). We dropped their category of youth philanthropy because too few sites in our sample focused primarily on this topic to allow for meaningful comparison with other categories. We added the topic on workings of government because it is a standard part of the civics curriculum (e.g., National Assessment of Educational Progress, 1998) and added the topic of media literacy because we argue that information age citizens must be able to use ICT effectively to participate in public life and engage with ICT policy issues. We limited our sample to sites in English created by organizations based in the US. Sites had to be focused on at least one of the types of civic activities in Table 1 and aimed primarily at US youth ages 12-24 according to the site's mission statement, homepage, or "about us" page. Because we were interested in larger organizational sites, we excluded sites maintained by a lone individual (such as personal blogs) and organizations that served a single school.

Because of the vast number and transience of World Wide Web sites, as well as the lack of any comprehensive tool for searching all available sites, it is unlikely that any study of Web sites can present a full population (Stern, 2004). Thus, our findings can only be generalized to the sites in our sample, although our search strategy offers some basis for confidence that the sample represents civic sites that youth and their teachers are most likely to locate through the major tools for searching the Web. We began assembling the study population by examining the list of 349 US-based youth civic sites, the largest list available, compiled by Montgomery, et al. (2004) from searching a wide variety of search engines, metasearch engines, directories, and lists

of links on major youth sites. After examining each site we eliminated 81 that no longer functioned or were not focused on civic content. We then conducted a further check on the comprehensiveness and currency of this list by searching seven major directories of sites for youth on February 28 – March 21, 2005.[1] During the same time we also searched major youth directories and links lists for sites in the two categories that we added to the study. Media literacy sites were located by searching all Google and Yahoo directories using the terms "media literacy," "information literacy," and "computer literacy," and reviewing all sites listed in six relevant Yahoo and Google directories, as well as examining all sites on nine major media literacy organizations' and government sites' links lists.[2] Sites on the workings of government were limited to those created by branches of the federal government and located using three major directories of government sites for youth.[3] This process yielded a final total of 336 sites. We then drew a stratified random sample proportionate to the number of sites that focused primarily on each type of civic engagement listed in Table 1. The sample consisted of 73 sites, comprised of over 122,500 files amounting to over 6 gigabytes of data. The sites were archived March 24-27, 2005 and three undergraduate coders coded the archived versions.[4]

Categories

The sites' pedagogical approaches were assessed using two sets of variables. Sites were coded for the presence of seven active teaching methods that the literature indicates are effective in civic education (Table 2). Coders measured whether these techniques were used to convey knowledge and develop skills. Fostering knowledge was defined as either providing descriptions on the site or links from the site to information about each area. Skill-building was defined as step-by-step instructions or interactive features on the site (content or interpersonal) that allowed users to apply or practice their knowledge in each area. Coders examined whether the sites

included ten interactive features: email accounts, listservs, chat rooms, message boards/blogs and other opportunities to submit content to the site, instant messaging, text messaging, online interactive games for individuals, online multiplayer games, virtual reality environments, and polls. The only kinds of content that were excluded from the coding were chat room conversations (because they were too ephemeral), content clearly aimed at adults (such as links to areas of a site labeled "For Parents" or job listings), advertisements, and site's privacy policies (because they were not considered to be discussions of online privacy *as an issue* and therefore would have confounded measurement of this variable).

The coding instrument measured ICT policy content on the sites in two ways. First, the instrument measured whether a site mentioned ICT regulation in general terms, including how ICT regulation or policy is shaped by government, civil society groups, corporations, and other actors; how cultural, economic, or political factors shape ICT design; or how ICT design in turn shapes culture, the economy, or politics. Coders then recorded whether the sites mentioned eight ICT issues, including online privacy, intellectual property and copyright, plagiarism, access and the digital divide, online security (including hacking, viruses, and identity theft), spam (unsolicited commercial email), electronic voting, and free speech issues related to ICT. To examine whether the bias described earlier favoring individual actions over collective responses found in social studies textbooks (Avery & Simmons, 2000/2001; Strachan, et al., 2004) carried over to the Internet, we measured whether sites discussed responses to ICT policy issues and whether these responses were individualistic (emphasizing what users can do to protect themselves or how individuals should behave appropriately), collectivist (involving organized group actions), or both.

Finally, coders categorized each site by type of ownership (commercial, government, and nonprofit), editorial control (by adults, by youth, and by both adults and youth), and primary type of civic engagement fostered by the site (using the definitions in Table 1). Editorial control of a site was gauged by examining the ages of those identified in the "about us" or "credits" pages of the site as responsible for its design as well as by examining the ages of those who participated in interactive features (such as message boards) when this information was available.[5]

Intercoder reliability

All coders used Internet Explorer 6.0 to minimize differences in the appearance of sites due to web browser software. Because of the number and complexity of categories, coders spent over 40 hours in training on the coding sheet. Eleven sites (about 15 percent of the sample) were randomly selected for a test of intercoder reliability. Across all variables in the study, agreement averaged 90.7 percent. All of the 45 variables reported here reached 80 percent agreement or above as averaged across the 3 coders, an accepted standard for exploratory research such as this (Riffe, Lacy, & Fico, 1998), with one exception: problem solving/decision-making skills earned 75.8 percent agreement.[6]

<div align="center">Results</div>

Active Pedagogy

To what extent did the sites employ active pedagogical techniques that research suggests are effective in civic education (our first research question)? Many sites used active teaching methods to promote knowledge through description or links to other sites (Table 3). Over two-thirds presented civic problems and described a way of making decisions to solve them and 60.3 percent offered information on collaborative group learning about civics. Knowledge of how to participate in civic life was also promoted in a majority of sites and just under half informed

users about project-based learning and expressing opinions through online and offline speech, followed by information about how to engage in civic discussion. Almost no sites referred to simulations (of conflict resolution, diplomacy, or city planning, and so on).

However, the sites were less likely to use active pedagogy to foster skills by including their own activities or explicit instructions for civic engagement. For example, less than one-third of sites offered youth on-site activities to develop or practice their abilities to express opinions, take part in discussion, or participate in public life. When the active pedagogy knowledge and skill items were combined into indexes (each ranging from 0 to 7), the difference in emphasis was clear. Active pedagogy for building knowledge achieved a mean of 3.41 ($SD =$ 1.87), while active pedagogy for developing skills averaged only 1.67 ($SD = 1.72$), a significant difference by the Wilcoxan Signed Ranks Test ($Z = 6.46$, $p < .001$, two-tailed).[7]

Interactive Features

Second, we asked to what extent the sites included features that permit interaction, which could facilitate skill-building using many of the active teaching methods identified with best practices in civic education. The features that appeared most often on sites were message boards or blogs or similar mechanisms for users to contribute content (on 38.4 percent of sites). Listservs were offered by 21.9 percent of sites. Other features were rare, including online games for individuals (12.3 percent), polls (9.6), chat rooms (4.1), text messaging (2.7), multiplayer online games (2.7), email accounts (1.4), instant messaging (1.4), and virtual reality (1.4). Of these ten interactive features, the average number of features per site was .96, with a standard deviation of .92. Thirty-four percent of the sites lacked a single interactive feature, while 9.6 percent of sites had three — the highest number of features on any site.

ICT Policy Issues

Our third research question asked to what extent sites introduced youth to policy issues related to ICT itself. We first measured whether the sites developed users' knowledge or skills related to how ICT regulation or policy is shaped by actors in the policy process and how cultural, economic, or political factors affect or are affected by ICT design. Only 13.7 percent of sites fostered knowledge of any of these issues and 2.7 percent fostered skills by offering instructions or activities that allowed users to apply their understanding of these issues.

There was also limited reference to specific ICT issues across the sites. Of the eight issues measured, the issue of access/digital divide was mentioned most often (on 17.8 percent of sites), followed by privacy (13.7 percent), intellectual property/copyright (13.7 percent), free speech/First Amendment (12.3 percent), spam (9.6 percent), security (6.8 percent), electronic voting (5.5 percent), and plagiarism (2.7 percent). The sites that addressed ICT issues typically referred to a handful of concerns that were central to the organization's mission. Examples include the Student Press Law Center's site (http://www.splc.org), which presented information and resources about First Amendment issues for student journalists, and the US Government Patent and Trademark Office (http://www.uspto.gov/go/kids/), where a children's section explained intellectual property issues.

When a site included one of the issues, the accompanying text was analyzed to determine if a potential solution was discussed, and if so, whether it was more individualistic, collectivist, or both. Out of sixty-one mentions of issues across the sites, 21.3 percent were not associated with a solution at all. Most commonly issues were presented as having individualistic solutions (37.7 percent), followed by collectivist solutions (29.5 percent), while only 11.5 percent of issues mentioned were accompanied by at least one individualistic and collectivist solution.

Sites' Performance by Ownership, Editorial Control, and Type of Civic Engagement

Fourth, we asked whether the sites' inclusion of active pedagogical techniques, interactive features, and ICT issues were related to ownership type, age of those responsible for editorial content, or type of civic engagement fostered by the site. To test these relationships, three indices were created: one combining active pedagogy used to teach knowledge and skills (14 items), one combining interactive features (10 items), and one combining the ICT issues (8 items). The active pedagogy index scores ranged from 0-12 (mean = 4.95, SD = 3.22, skewness = .166, kurtosis = -939); the interactivity index scores ranged from 0-9 (mean = .96, SD = .92, skewness = .854, kurtosis = .081); and the ICT issue index scores ranged from 0-7, (mean = .82, SD = 1.49, skewness = 2.14, kurtosis = 4.42). The active pedagogy index and ICT issue index proved quite high (each had a Kuder-Richardson reliability estimate of .77). The Kuder-Richardson reliability coefficient for the interactive features index, however, was very low (.13) because of the small number of sites that included many, or any, of the interactive features for which we coded. Correlations among the three indices were computed using the Spearman's rho statistic. Only the correlation between Interactive features and ICT issues proved significant (Spearman's rho=.23, p = .05).

Because of the characteristics of the data, including unequal and small sample sizes within the independent variable (especially ownership type) and dependent variables with non-normal distributions, nonparametric analyses were used to examine the relationships between ownership type and editorial control and the three indices.

The three ownership types varied significantly in their emphasis on active pedagogy (Table 4). Non-profit organizations were most likely to score high on this index, followed by for-profit companies, and lastly, government agencies. However, for-profit sites were

significantly more likely to include more interactive features than non-profits or government sites. Ownership was not significantly associated with attention to ICT issues.

We also investigated whether the age of those who contributed editorial content to the sites related to their use of active pedagogy. We combined sites in which young people were either exclusively in charge of the site ($n = 12$) and those in which they shared editorial control with adults ($n = 15$) and contrasted this group with sites controlled by adults only ($n = 46$). Analyses revealed that sites in which youth contributed to editorial content were significantly more likely to rank higher on the active pedagogy index than sites exclusively controlled by adults. However, no significant differences occurred when age of contributors was related to attention to interactive features or ICT issues.

We examined the fourteen sites that scored highest on the active pedagogy index in greater detail. Ten of them emphasized youth activism, addressing issues from the environment to presenting the platform of a political party. Consistent with their missions, the sites offered opportunities for young people to address real world problems, express their opinions to others, take part in discussions online, and participate in some type of civic activity, such as a campaign with adults or peers. In other words, they provided not only information about issues but employed teaching methods that supplied opportunities for youth to develop civic skills. Most of these high-scoring active pedagogy sites also involve youth in designing or providing the editorial content.

The non-profit Student Environmental Action Coalition (SEAC) offers an example of a site that excelled on both active pedagogy and ICT issues. SEAC describes itself as a grassroots environmental activism organization that "was created by and continues to be organized by young activists committed to change" (http://www.seac.org/about/index.shtml). Indeed, the site

offers numerous ways for youth to develop participatory knowledge and skills. Youth may

become involved in four major campaigns that offer concrete steps for taking action. For

example, the "Militarism & the Environment" campaign invites youth to "Sign on to SEAC's

anti-militarism listserv; Bring a SEAC speaker to educate your campus or community; Help

distribute copies of Militarism & the Environment materials; Subscribe to SEAC's magazine

Threshold" (http://www.seac.org/militarism/take.shtml). The site invites group learning by

connecting visitors with other youth (and adults) working on similar issues to share experiences

or advice. Message boards allow youth to contribute their editorial voice to the site and practice

their online skills in opinion expression and discussion. SEAC addresses the issues of online

privacy and security by giving specific instructions about how activists can use encryption

software to protect themselves against corporate or government surveillance.

Discussion

In this study we examined whether civic sites employ what the literature on civic

education indicates are successful teaching methods, the extent of interactivity on the sites, and

whether the sites introduce youth to ICT policy issues. The results indicate that most of the sites

analyzed here are not designed in ways that civic educators and Internet usability researchers

suggest would most powerfully boost young people's civic engagement.

At first glance, many of the sites appeared to be using the kinds of active pedagogy that

has been shown to be more attractive to youth and effective in civic education. Although few

sites discussed or featured simulations, about one-half to two-thirds of the sites offered

information about civic problem solving, group learning, project-based learning, opinion

expression, discussion, and participation. Yet the sites were only about half as likely to offer

instructions or activities that employed these methods, meaning that sites were much more likely

to *tell* youth about active learning techniques than to *practice* them. Fewer than 40 percent of sites developed youth's skills with interactive communication features such as listservs, chat rooms, message boards and online games, and the sample as a whole averaged less than one interactive feature per site. Thus, most sites offered a passive experience to youth by emphasizing the reception of knowledge rather than the experience of practicing civic skills, an approach that research on traditional civic education found to be largely ineffective and that usability studies indicate are less attractive to youth. This passive mode of learning shares a weakness of traditional approaches to political socialization: the assumption that the provision of information alone will cure civic disengagement (Buckingham, 2000).

Despite the poor performance of the sample as a whole, the sites that incorporated more active teaching methods or interactivity can be distinguished in several ways. First, the sites that were more likely to include active active pedagogy also tended to include youth as content contributors, suggesting that letting youth participate in constructing the content of sites strengthens rather than weakens their educational value. Youth are more likely to participate in civic life when asked to do so directly by civic and political organizations, but the young are asked less often than older generations (Keeter, et al., 2002). Civic sites for youth are prime places for extending such invitations to participate. Qvortrup (1995, p. 9) observes the paradox that "Adults agree that children must be educated to freedom and democracy, but society's provision is given mostly in terms of control, discipline, and management." Our findings suggest that resolving this paradox in favor of soliciting youth contributions to understanding and discussion is worthwhile. Second, nonprofit sites tended to outperform for-profit and government sites at using active learning methods. Nonprofits' missions appeared to be more able to embrace active learning about civic life, whereas government agencies devoted their sites

for youth to explaining their functions rather than stimulating discussion or participation.

However, for-profit sites offered more interactive features than non-profit sites. This may be

because non-profits typically have smaller budgets for creating and maintaining interactive sites,

which require greater technical expertise and labor than merely posting text and images. This

implies that funding may be a critical factor in site design, but that even those sites that contain

more communication features do not necessarily include more active pedagogical approaches.

Third, sites that were more successful at incorporating active pedagogy also tended to have an

activist bent that prioritized mobilizing youth to participate in campaigns and projects that

connected them with others through the Internet. Youth site designers could benefit from

studying these kinds of sites for strategies that might be adapted to other civic uses, such as

volunteering, voting, and other forms of engagement.

Many organizations that might be assumed to be at the forefront of efforts to use the

Internet to engage youth appear not to have heard educators' calls to prepare youth for

information age citizenship by informing them about ICT policy issues. The most frequently

addressed issue on the sites – the digital divide – appeared in fewer than 20 percent of the sites

studied and even less attention was paid to issues that reflect basic rights such as privacy,

security, and free speech. Furthermore, echoing prior research on civics textbooks, we found the

sites tended to discuss individual solutions (such as using privacy software to protect oneself

from surveillance) more than collective responses (such as joining an organization that is

attempting to influence privacy law). Few sites offered both kinds of solutions, which we argue

would be most useful to budding citizens by offering a range of responses to ICT issues that

would give youth more opportunities to act.

We do not argue that these sites fail to promote civic engagement on the issues they address, but that the ubiquity of ICT and its significance both as a policy domain and vehicle for engagement means these issues are not only relevant to the sites' aims but would help further them. The fact that these civic organizations are using the Web to reach young people underscores the importance of information technology in civic life and the importance of developing knowledge of ICT-related issues. These issues could be integrated easily into their missions. Sites that promote voting can address how to use electronic voting machines and questions of reliability raised by them. Activism sites could pay greater attention to ICT issues related to their missions that affect youth's lives directly – such as intellectual property and file sharing, free speech rights on school-based networks, and so on – in order to motivate youth participation in the political system. Volunteering sites could draw attention to closing the digital divide and other ICT-related service opportunities. Youth development sites could incorporate discussion of respecting others' privacy, security, academic and intellectual property online into their attempts to foster civic virtue. Sites aimed at increasing tolerance of diversity might address security and free speech issues raised by proposals for combating hate speech. Efforts to boost global understanding rely on Internet access as a pre-requisite for participation in cross-border youth projects and could help students grasp international differences in free speech law, privacy regulations, and so on. Government agencies that have created youth-oriented sites explaining how these agencies work could incorporate discussion of ICT policy issues relevant to their missions and how they use ICT to accomplish them. The missions of media literacy and journalism/media production sites are intimately bound up with addressing every one of the issues addressed in this study.

Content analysis of Web sites is a methodology in formation. Although our sample reflects our best efforts to represent US-based, civic sites for youth, caution should be taken in generalizing from it because of the sample size and the impossibility of locating a universe of sites given the limits of current search tools. In addition, by focusing our sample on sites with a primary mission of engaging youth in civic life, we did not include all sites where youth civic activity may be occurring (for example, we eliminated some well-known social networking sites such as YouTube and MySpace, where some young people are mixing civic and other kinds of communication, because neither site aims mainly to foster civic participation). Our coding scheme did not distinguish between sites that featured an attribute prominently or extensively and those that treated it marginally or briefly. However, the major findings in this study would not be affected by using more fine-grained metrics. The fact that the sites scored poorly on many measures even though a single mention of an ICT skill or civic use of ICT would have been enough for us to code the site as including them means that the bias of our research instrument was toward *overestimating* rather than underestimating the frequency of interactive and ICT policy content found to be missing on so many sites.

Our study suggests a number of directions for subsequent research. Future content studies of the quality of Web sites should not simply count interactive features because these features do not necessarily guarantee nor fully reflect the presence of active techniques for civic learning. Both kinds of measures should be used. In addition, further study of the economics and sociology of civic Web sites is needed, particularly of the determinants of sites' interactivity and use of active pedagogy. Based on the relationships found in this study, we hypothesize that the extent of interactive features and active teaching methods on civic sites for youth are influenced by an organization's resources (i.e., organizations with larger budgets will be more

likely to invest in interactivity) and mission (with nonprofit and activism sites most likely to support active pedagogy and government sites least likely). In addition, a third predictor of interactive features is likely to be organizations' level of concern about legal liability for content posted by youth (with organizations that are more concerned offering less interactivity). Furthermore, user studies are needed to distinguish the interactive features that are most effective at attracting youth to civic Web sites and fostering civic learning and participation for different kinds of youth. For example, advocates of digital game-based learning have claimed that even commercial games are powerful "learning engines" (Gee, 2003) that can be harnessed for educational use in innovative ways, and games are increasingly incorporated into online campaigns and Web sites. However, because of the simplicity of many of the current games, we would hypothesize that interactive games on civic sites may modestly increase youth's political interest, but do little or nothing to boost political knowledge or skills. Given the greater appeal of many genres of digital games for males compared to females (Graner Ray, 2004), it is likely that the effects of civic games will vary by gender.

We have noted that prior research indicates that civic education has not always succeeded in building youths' knowledge of and participation in public life. Although a content study cannot determine what users are learning from civic Web sites, this research raises questions about whether the sites in this sample are repeating the mistakes made in traditional civics classrooms by failing to provide active learning opportunities. For new civic media no less than for traditional media, multi-level research (Pan & McLeod, 1991) is needed to understand the optimal economic and organizational conditions, media content and design, and user factors that might foster civic engagement of youth. Such research could help confirm several other hypotheses suggested by our findings: that the hallmarks of effective site design for engaging

youth include pairing unique online opportunities for civic skill development based on active

pedagogy with interactive features, incorporating attention to ICT issues relevant to the lives of

youth to connect them with larger forums for civic discussion and action, allowing ample

opportunities for youth to contribute to editorial content, and promoting both individual and

collective means to participate in society.

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Table 1

Forms of Civic Engagement

Category	Description
Volunteering/ Community Service	Offline or online sharing of users' time and/or skills (but not money)
Voting	Participation in electoral activity including voter registration, unofficial "straw polls," or other voting simulations online or offline
Global Issues/ International Understanding	Collaborative online activities that involve youth from different nations or focus on international issues
Online Youth Journalism/Media Production	Online news reporting, arts projects, documentaries, etc., that allow youth to use the Web to analyze and comment on the world
Tolerance and Diversity	Activities that foster acceptance and celebration of diverse cultures, races, ethnicities, religions, sexual preferences, body types and appearances
Positive Youth Development	Activities that prepare youth to be responsible individuals, including character-building and fostering civic virtue, obeying the law, patriotism, fostering good judgment, leadership training, ethical behavior (including responsible Internet use)
Youth Activism	Activities that help youth to organize and express their political views to or about major institutions (government, corporations, schools, the media, churches, etc.), online or offline, alone or collectively, with peers or adults
Media Literacy	Analysis of media representations of issues, critical thinking about media, ethical usage of media (netiquette, avoiding copyright infringement, surfing safely, etc.)
Workings of Government	Fostering understanding of how levels and agencies of government function (e.g., how a bill becomes law, what the CIA does)

Table 2

Active Pedagogies

Category	Additional Coding Definition
Problem Solving	Making decisions or taking actions that aim to solve real-world civic problems (not private or individual self-help)
Group Learning	Learning in peer groups about civic issues
Project-Based Learning	Sharing one's learning about civic issues through student-selected projects
Simulations	Learning through games or role-playing exercises based on a simplified model of a real-world situation
Opinion Expression	Fostering online or offline speech to communicate views
Discussion	Interactive communication of policy options that involves direct response to others
Participation	Fostering action aimed at directly influencing civic life

Table 3

Percent of Sites Containing Active Pedagogical Techniques for Civic Education (N=73)

Pedagogical Technique	Knowledge	Skills
Problem Solving/Decision-making	69.9	38.4
Group Learning	60.3	26.0
Project-based Learning	47.9	21.9
Simulations	2.7	1.4
Opinion Expression	49.3	31.5
Discussion	41.1	21.9
Participation	56.2	26.0

Table 4

Mean Differences on ICT Issues, Active Pedagogy, and Interactive Features by Site Ownership and Editorial Control

		ICT Issues[a]	Active Pedagogy [b]	Interactive Features [c]
Site Ownership	*n*	Mean Rank	Mean Rank	Mean Rank
Non-profit	58	37.56	40.79	34.03
For-profit	6	34.56	30.33	54.75
Government	9	35.17	17.00	44.28

Note a. For ICT Issue Index, Kruskal Wallis Test results: *Chi-Square* of .28, *df* = 2, *p* = .867

Note b. For Active Pedagogy Index, Kruskal Wallis Test results: *Chi-Square* of 10.58, *df* = 2, *p* = .005

Note c. For Interactive Features Index, Kruskal Wallis Test results: *Chi-Square* of 7.39, *df* = 2, *p* = .03.

		ICT Issues [d]	Active Pedagogy [e]	Interactive Features [f]
Editorial Control	*n*	Mean Rank	Mean Rank	Mean Rank
Youths Involved	27	38.50	49.74	36.41
Adults Only	46	36.12	29.52	37.35

Note d. For ICT Issue Index, the Mann-Whitney U Test = 580.50, *p* = .583

Note e. For Active Pedagogy Index, the Mann-Whitney U Test = 277, *p* < .001

Note f. For Interactive Features Index, the Mann-Whitney U Test = 605.00, *p* = .84

Notes

[1] Google – Kids and Teens (directory.google.com/Top/Kids_and_Teens/); Yahoo – Society and Culture – Cultures and Groups – Teenagers (dir.yahoo.com/Society_and_Culture/Cultures_and_Groups/Teenagers/); Yahoo – Society and Culture – Cultures and Groups – Children (dir.yahoo.com/Society_and_Culture/Cultures_and_Groups/Children/); KidsClick! (sunsite.berkeley.edu/KidsClick!/); Femina (femina.cybergrrl.com/); American Library Association - Great Sites for Kids (www.ala.org/greatsites); CIRCLE (www.civicyouth.org/practitioners/org_links.htm).

[2] Directories included Yahoo's News and Media – Media Literacy directory (dir.yahoo.com/News_and_Media/Industry_Information/Media_Literacy/), including the subdirectories "culture jammers" and "youth media awareness"; the Google directories entitled News – Media – Media Literacy (directory.google.com/Top/News/Media/Media_Literacy/), Society –Issues –Education – Literacy – Information Literacy (directory.google.com/Top/Society/Issues/Education/Literacy/Information_Literacy/), and Kids and Teens – Computers – Internet (directory.google.com/Top/Kids_and_Teens/Computers/Internet/). Links lists examined included the American Coalition for Media Education (www.acmecoalition.org), US Department of Justice Cyberethics for Kids (www.cybercrime.gov); Cybercitizenship.org (cybercitizenship.org); Kidspace @ the Internet Public Library – Computers and Internet (www.ipl.org/div/kidspace/); Culture of Modeling – Media Literacy Sites for Girls (www.cultureofmodeling.com/links.htm); Mediachannel.org – Children (www.mediachannel.org/affiliates/topic/topic_205_1.shtml); KQED Media Literacy Links (www.kqed.org/w/ymc/reality/links.html); PBS Don't Buy It (pbskids.org/dontbuyit/whatyoucando/learnmore.html); National Institute on Media and the Family – links to media literacy sites (www.mediafamily.org/links/index.shtml).

[3] These included FirstGov for Kids (www.kids.gov), Edworld – Social Sciences (www.education-world.com/awards/past/topics/soc_sci.shtml), and KidsClick! – Society and Government (sunsite.berkeley.edu/KidsClick!/topsoci.html)

[4] Because one site was under construction at the time of archiving, it was eliminated from the sample.

[5] Sites were coded as created by adults if credits indicated that the designers were all 25 years of age and above and where less than two-thirds of the postings to interactive areas of the site appeared to be created by youth (24 and younger).   Sites were coded as created by youth if the same indicators suggested that the site was created exclusively by those under 25. Sites were coded as created by both adults and youth if credits indicated that the site was created by at least one youth and at least one adult, and youth-created content made up at least one third of the site. For example, an e-zine created by adults that mostly featured youths' writings was counted as created by both adults and youth.

[6] Because the sample size was limited to 73 sites, data from the sites used to test intercoder reliability were included in the full sample. Where there were coder disagreements on a given variable, the coding decision shared by two of the three coders was used in the final data set. Although percent agreement has the limitation of over-estimating reliability by not correcting for chance agreement, we report this statistic because it provides a clearer indication of the level of agreement among coders for the type of data in the study than other widely used statistics. Some of the categories we measured were absent from some or all sites. Because statistics like Krippendorff's *alpha*, Scott's *pi* or Cohen's *kappa* take into account not only the number of categories associated with a given variable, but also the probable frequency of use, when there is little variation in the sample due to the nature of the material being coded, these statistics produce extremely low (or incalculable) reliabilities. If all coders agree that a category is absent (or present), Krippendorff's *alpha*, Scotts' *pi*, or Cohen's *kappa* will be essentially incalculable.

[7] Because of the small sample size and the fact that many of the variables in the study are not normally distributed, nonparametric statistics are used throughout the analyses.