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Internet Blocking in Public Schools

A Study on Internet Access in Educational Institutions

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Section 1

Abstract

The issue of the effectiveness and societal implications of Internet blocking or filtering software in schools deserves the attention of students, parents, teachers, administrators, school board members, and legislators to help ensure the best possible educational opportunities for students in U.S schools.

As the Internet grows, determining which web pages contain content for which the government may legitimately require schools to block becomes more complex and difficult. The immense size and variability of the Internet raises concerns as to whether it is possible to limit Internet blocking only to web pages containing legally "blockable" content.

For instance, the Children's Internet Protection Act (CIPA) targets three types of visual depictions: obscenity, child pornography, or in the case of minors, content that is "harmful to minors." Under CIPA, every school that receives certain federal funds or discounts must install a technology protection measure such as Internet blocking software to block student access to these types of images. The definitions of these categories are very specific and limited, guided by court precedent. However, many parents would like schools to block—and many schools do block—web pages completely unrelated to these CIPA categories.

The Electronic Frontier Foundation (EFF) and the Online Policy Group (OPG) have cooperated to study and analyze the accessibility on the web of information related to state-mandated curriculum topics within public schools that operate Internet blocking software. This study measures the extent to which blocking software impedes the educational process by restricting access to web pages relevant to the required curriculum.

The study used a straightforward methodology for determining the accessibility of information on school computers operating with Internet blocking software and has produced auditable results. The research examined the effects of N2H2's Bess and SurfControl's SurfControl, two of the most commonly used Internet blocking software products, on Internet searches of text taken directly from the state-mandated curriculums of California, Massachusetts, and North Carolina.

Examining nearly a million web pages, the researchers found the following:

- For every web page blocked as advertised, blocking software blocks one or more web pages inappropriately, either because the web pages are miscategorized or because the web pages, while correctly categorized, do not merit blocking. In the case of block codes related to or suggested by the manufacturer for CIPA compliance, the blocking software miscategorized 78% – 85% of the distributed sample.

- Schools that implement Internet blocking software even with the least restrictive settings will block at a minimum tens of thousands of web pages inappropriately,

either because the web pages are miscategorized or because the web pages, while correctly categorized, do not merit blocking.

- Blocking software products miscategorized many of the web pages they block—assigning the wrong block codes to between a third and a half of the web pages related to state-mandated curriculums blocked depending on the blocking software.

- Of all pages related to state-mandated curriculums blocked by blocking products, the products blocked only 1-3% of those web pages to CIPA's criteria for blocking visual depictions of illegal obscenity, child pornography, or harmful to minors content. That means that of the web pages related to state-mandated curriculums, blocking software products blocked 97-99% of the web pages blocked using non-standard, discretionary, and potentially illegal criteria beyond what is required by CIPA.

- Although curriculum topic categories more often blocked by N2H2's Bess product in an East Coast high school include such topics as the Klan (36% or web pages related to this curriculum topic blocked), firearms (50%), drunk driving, slavery, genocide, and perjury (33%), they also contain topics such as pogo-stick (46%), comedy (42%), personal care (32%), likes and dislikes (32%), and write or dictate short poems (32%).

- Schools that implement Internet blocking software with the least restrictive commonly-used settings will block between 0.5% and 5% of search results based on state-mandated curriculum topics.

- Schools that implement Internet blocking software with the most restrictive settings block 70% or more of search results based on state-mandated curriculum topics.

- Internet blocking software was not able to detect and protect students from access to many of the apparently pornographic sites that appeared in search results related to state-mandated curriculums.

- Internet blocking software companies cannot possibly complete human review of a substantial portion of the web pages on the Internet.

Based on the results obtained from this study, we draw the following conclusions:

- The use of Internet blocking software in schools cannot help schools comply with the law because schools do not and cannot set the software to block only the categories required by the law, and because the software is incapable of blocking only the visual depictions required by CIPA. Blocking software overblocks and underblocks, that is, the software blocks access to many web pages protected by the First Amendment and does not block many of the web pages that CIPA would likely prohibit.

- Blocking software does not protect children from exposure to a large volume of material that is harmful to minors within the legal definitions. Blocking software cannot adapt adequately to local community standards. Most schools already have in place alternatives to Internet blocking software, such as adoption and enforcement of Internet use policies, media literacy education, directed use, and supervised use.

- Blocking software in schools damages educational opportunities for students, both by blocking access to web pages that are directly related to state-mandated curriculums and by restricting broader inquiries of both students and teachers. Teachers and students 17 years or older (most high school juniors and seniors) should be exempt, yet suffer the consequences of CIPA implementation.

Section 2

Preface

The Electronic Frontier Foundation (EFF) and the Online Policy Group (OPG) are studying Internet blocking software for the following reasons:

- No organization has studied effectively and quantitatively the issue of student Internet access within public schools that operate Internet blocking software. [10]
- The Children's Internet Protection Act (CIPA) requires use of a "technology protection measure" such as Internet blocking software in all schools that receive certain federal funds or discounts. [24]
- Inappropriate censorship negatively impacts educational opportunities. [13]
- Safety of educational communities and individuals online is critical to a productive educational environment.

Since their inception, EFF and OPG have made clear and deliberate strides to preserve civil liberties despite clashes between technological advancements and legal developments. Both these organizations strive to establish policy that best serves the community by careful analysis of the legal and technical landscape.

The percentage of children who use the Internet has increased steadily in the recent past, and various organizations and members of the public have expressed concern about illegal obscene, child pornographic, or harmful to minors materials. Congress passed a series of legislation, including the Communications Decency Act (CDA), the Child Online Protection Act (COPA), and the Children's Internet Protection Act (CIPA), which attempted to address this concern. [24] [23] [22] CIPA is particularly relevant since it focuses on blocking of Internet use in schools and because, while U.S. courts have struck the relevant portions of CDA and COPA, they have not yet ruled CIPA unconstitutional in the context of schools. [26] [27] [28]

The Children's Internet Protection Act

The Children's Internet Protection Act of 2000, was passed by Congress and signed by President Clinton:

> To require the installation and use by schools and libraries of a technology for filtering or blocking material on the Internet on computers with Internet access to be eligible to receive or retain universal service assistance

CIPA Provisions

This section outlines the parts of CIPA particularly relevant to Internet blocking in schools, that is, CIPA §1702, §1711, and §1721.

Disclaimers

CIPA §1702 provides the following disclaimers related to effects of the law on Internet blocking beyond what is required by CIPA and on privacy concerns related to monitoring of Internet use:

> SEC. 1702. DISCLAIMERS.
>
> DISCLAIMER REGARDING CONTENT.--Nothing in this title or the amendments made by this title shall be construed to prohibit a local educational agency, elementary or secondary school, or library from blocking access on the Internet on computers owned or operated by that agency, school, or library to any content other than content covered by this title or the amendments made by this title.
>
> (b) DISCLAIMER REGARDING PRIVACY.--Nothing in this title or the amendments made by this title shall be construed to require the tracking of Internet use by any identifiable minor or adult user.

Internet Safety Policy and Technology Protection Measure

CIPA §1711 amends Title III of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 6801 et seq.) to require schools receiving certain federal funds or discounts to adopt and enforce an Internet use policy and technology protection measure preventing access to visual depictions that are obscene, child pornography or harmful to minors:

> SEC. 3601. LIMITATION ON AVAILABILITY OF CERTAIN FUNDS FOR SCHOOLS.
>
> (a) INTERNET SAFETY.—
>
> (1) IN GENERAL.--No funds made available under this title to a local educational agency for an elementary or secondary school that does not receive services at discount rates under section 254(h)(5) of the Communications Act of 1934, as added by section 1721 of Children's Internet Protection Act, may be used to purchase computers used to access the Internet, or to pay for direct costs associated with accessing the Internet, for such school unless the school, school board, local educational agency, or other authority with responsibility for administration of such school both—
>
> (A)(i) has in place a policy of Internet safety for minors that includes the operation of a technology protection measure with respect to any of its computers with Internet access that protects against access through such computers to visual depictions that are—
>
> (I) obscene;
>
> (II) child pornography; or

(III) harmful to minors; and

(ii) is enforcing the operation of such technology protection measure during any use of such computers by minors; and

(B)(i) has in place a policy of Internet safety that includes the operation of a technology protection measure with respect to any of its computers with Internet access that protects against access through such computers to visual depictions that are—

(I) obscene; or

(II) child pornography; and

(ii) is enforcing the operation of such technology protection measure during any use of such computers.

…

(D) MINOR.--The term ‘minor' means an individual who has not attained the age of 17.

(E) CHILD PORNOGRAPHY.--The term ‘child pornography' has the meaning given such term in section 2256 of title 18, United States Code.

(F) HARMFUL TO MINORS.--The term ‘harmful to minors' means any picture, image, graphic image file, or other visual depiction that—

(i) taken as a whole and with respect to minors, appeals to a prurient interest in nudity, sex, or excretion;

(ii) depicts, describes, or represents, in a patently offensive way with respect to what is suitable for minors, an actual or simulated sexual act or sexual contact, actual or simulated normal or perverted sexual acts, or a lewd exhibition of the genitals; and

(iii) taken as a whole, lacks serious literary, artistic, political, or scientific value as to minors.

(G) OBSCENE.--The term ‘obscene' has the meaning given such term in section 1460 of title 18, United States Code.

(H) SEXUAL ACT; SEXUAL CONTACT.--The terms ‘sexual act' and ‘sexual contact' have the meanings given such terms in section 2246 of title 18, United States Code.

CIPA §1721 amends the Communications Act of 1934 (47 U.S.C. 254(h)(5)) to require schools receiving certain federal funds or discounts to adopt and enforce an Internet use policy and technology protection measure preventing access to visual depictions that are obscene, child pornography or harmful to minors:

(5) REQUIREMENTS FOR CERTAIN SCHOOLS WITH COMPUTERS HAVING INTERNET ACCESS.—

(A) INTERNET SAFETY.—

(i) IN GENERAL.--Except as provided in clause (ii), an elementary or secondary school having computers with Internet access may not receive services at discount rates under paragraph (1)(B) unless the school, school board, local educational agency, or other authority with responsibility for administration of the school—

(I) submits to the Commission the certifications described in subparagraphs (B) and (C);

(II) submits to the Commission a certification that an Internet safety policy has been adopted and implemented for the school under subsection (l); and

(III) ensures the use of such computers in accordance with the certifications.

(ii) APPLICABILITY.--The prohibition in clause (i) shall not apply with respect to a school that receives services at discount rates under paragraph (1)(B) only for purposes other than the provision of Internet access, Internet service, or internal connections.

(iii) PUBLIC NOTICE; HEARING.--An elementary or secondary school described in clause (i), or the school board, local educational agency, or other authority with responsibility for administration of the school, shall provide reasonable public notice and hold at least 1 public hearing or meeting to address the proposed Internet safety policy. In the case of an elementary or secondary school other than an elementary or secondary school as defined in section 14101 of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 8801), the notice and hearing required by this clause may be limited to those members of the public with a relationship to the school.

(B) CERTIFICATION WITH RESPECT TO MINORS.--A certification under this subparagraph is a certification that the school, school board, local educational agency, or other authority with responsibility for administration of the school—

(i) is enforcing a policy of Internet safety for minors that includes monitoring the online activities of minors and the operation of a technology protection measure with respect to any of its computers with Internet access that protects against access through such computers to visual depictions that are—

(I) obscene;

(II) child pornography; or

(III) harmful to minors; and

(ii) is enforcing the operation of such technology protection measure during any use of such computers by minors.

(C) CERTIFICATION WITH RESPECT TO ADULTS.--A certification under this paragraph is a certification that the school, school board, local educational agency, or other authority with responsibility for administration of the school—

(i) is enforcing a policy of Internet safety that includes the operation of a technology protection measure with respect to any of its computers with Internet access that protects against access through such computers to visual depictions that are—

(I) obscene; or

(II) child pornography; and

(ii) is enforcing the operation of such technology protection measure during any use of such computers.

(D) DISABLING DURING ADULT USE.--An administrator, supervisor, or other person authorized by the certifying authority under subparagraph (A)(i) may disable the technology protection measure concerned, during use by an adult, to enable access for bona fide research or other lawful purpose.

CIPA Litigation

On May 31, 2002, the U.S District Court for the Eastern District of Pennsylvania ruled in *United States of America v. American Library Assocation* (2002) against CIPA as it applied to public libraries because the court held the law violates the First Amendment [28]. The ruling concluded that Internet blocking software products operate as "blunt instruments" that are unable to block obscenity, child pornography, and other materials that are harmful to minors and still preserve access to constitutionally protected content. The court ruled that:

> …the library plaintiffs must prevail in their contention that CIPA requires them to violate the First Amendment rights of their patrons, and accordingly is facially invalid… In view of the limitations inherent in the filtering technology mandated by CIPA, any public library that adheres to CIPA's conditions will necessarily restrict patrons' access to a substantial amount of protected speech, in violation of the First Amendment.

Though providing relief for public libraries, the plaintiffs did not request and the court did not remove the requirement for public schools to install Internet blocking software in order to receive certain federal funding or discounts. The U.S government has already appealed even the library-related decision to the Supreme Court.

In the library case, the court relied on the constitutional limitations to Congress' spending clause power, citing *South Dakota v. Dole*, 483 U.S. 203 (1987) on violation of the constitutional rights of those receiving federal funding or discounts. The court concluded that restrictions on such funding and discounts for public libraries are subject to strict scrutiny, rather than just rational basis review because, as in *Reno v. ACLU*, 521 U.S 844, 868 (1997):

> …the more widely the state facilitates the dissemination of private speech in a given forum, the more vulnerable the state's decision is to restrict access to speech in that forum.

The court explains that:

> …provision of Internet access uniquely promotes First Amendment values in a manner analogous to traditional public for a such as streets, sidewalks, and parks, in which content-based restrictions are always subject to strict scrutiny.
>
> Under strict scrutiny, a public library's use of filtering software is permissible only if it is narrowly tailored to further a compelling government interest and no less restrictive alternative would serve that interest.

While acknowledging the government's legitimate interest in preventing access to visual depictions of obscenity, child pornography, or in the case of minors, material harmful to minors, the court found that there exist less restrictive alternatives, such as implementation and enforcement of Internet use policies, as well as optional Internet blocking, privacy screens, recessed monitors, and placement of unfiltered Internet terminals out of sight-lines for adults and "requiring parental consent to or presence during unfiltered access or restricting minors' unfiltered access to terminals within view of library staff."

Basically, the court declared CIPA unconstitutional for libraries because of the underblocking of visual depictions of obscenity, child pornography, or in the case of minors, material harmful to minors, and because of the overblocking of materials protected under the First Amendment of the U.S. Constitution.

It is unclear what effect such a ruling, if upheld by the U.S. Supreme Court, would have on a similar legal challenge brought in the school rather than the library setting.

Related Litigation and Legal Definitions

As interpreted by the U.S. judiciary system, the First Amendment of the U.S. Constitution does not protect illegal obscenity, child pornography, or—in the case of minors—harmful to minors content.

There is sometimes confusion over the legal definitions of illegally obscenity, child pornography, and harmful to minors materials.

Obscenity

CIPA uses the constitutional definition of obscenity set forth in *Miller v. California*, 413 U.S. 15 (1973), and codified at 18 U.S.C. 1460:

- Whether the average person, applying contemporary community standards, would find that the material, taken as a whole, appeals to the prurient interest;
- Whether the work depicts or describes, in a patently offensive way, sexual conduct specifically defined by the applicable state or federal law to be obscene; and
- Whether the work, taken as a whole, lacks serious literary, artistic, political, or scientific value.

Child Pornography

CIPA uses the statutory definition of "child pornography" found in 18 U.S.C. 2256:

- "Any visual depiction" of a minor under 18 years old engaging in "sexually explicit conduct," which includes "actual or simulated" sexual intercourse, bestiality, masturbation, sadistic or masochistic abuse, or "lascivious exhibition of the genitals or pubic area."

The U.S. Supreme Court has ruled in *Ashcroft v. Free Speech Coalition*, 122 S.Ct. 1389 (2002) that any activity not actually involving a minor cannot be child pornography.

Harmful to Minors

CIPA defines "harmful to minors" as:

> …any picture, image, graphic image file, or other visual depiction that-
>
> (i) taken as a whole and with respect to minors, appeals to a prurient interest in nudity, sex, or excretion;
>
> (ii) depicts, describes, or represents, in a patently offensive way with respect to what is suitable for minors, an actual or simulated sexual act or sexual contact, actual or simulated normal or perverted sexual acts, or a lewd exhibition of the genitals; and
>
> (iii) taken as a whole, lacks serious literary, artistic, political, or scientific value as to minors.

This harmful to minors definition is similar to the definition provided by *Ginsberg v. New York*, 390 U.S. 629 (1968).

As with CIPA, the *Ginsberg* case also defined a minor as under 17 years of age. *Ginsberg* also provided that parents may provide harmful to minors speech to their children, although according to the court that struck the library portions of CIPA, CIPA provides no such exception for parents to provide such materials to minors. [28] [21]

Other Content

The legal definitions provided in CIPA do not cover other types of content, such as chat, criminal skills, drugs, alcohol, or tobacco, electronic commerce, free pages, gambling, hacking, hate speech, violence, weapons, web-based email, and so on, which are blocking codes often used by Internet blocking software manufacturers in their products.

Students have a right to speak, even at school. In a case affirming the right of students to wear black armbands protesting the Vietnam War, the U.S. Supreme Court found that students who are minors "are 'persons' under our Constitution possessed of fundamental rights which the State must respect." *Tinker v. Des Moines Independent Community School District*, 393 U.S. 503, 511 (1969). In another case, the Court found that minors have the right to receive information in public school libraries. *Board of Education, Island Trees Union Free School District No. 26 v. Pico*, 457 U.S. 853, 867, 872 (1982).

While minors' constitutional rights are weaker than adults' rights, minors' rights become stronger as they grow older. In a case involving minors' right to abortion, the Court said

that "constitutional rights do not mature and come into being magically only when one attains the state-defined age of majority." *Planned Parenthood of Central Missouri v. Danforth*, 428 U.S. 52, 74 (1976); see *Bellotti v. Baird*, 443 U.S. 622, 648 (1979) ("parental consent" abortion statute must contain procedure for minor to get abortion without parental consent or notice).

Indeed, "mature minors" arguably have a right to information despite their parents' wishes in the areas of reproductive health, sexually-transmitted diseases, contraception, and abortion. See *Doe v. Irwin*, 615 F.2d 1162, 1166 (6th Cir. 1980).

The courts also recognize the rights of parents and guardians to control much of their childrens' experience at schools. As EFF Senior Staff Attorney Lee Tien has written:

> …schools traditionally, and sometimes by statue, accommodate parental wishes as to their children's exposure to material in school. EFF therefore argues that parents enjoy at least as much right to insist that their children not be blocked from objectionable speech. Indeed, parents may have more right to opt out of blocking.

In recent years, school administrators have exerted greater control over speech in schools. For example, the U.S. Supreme Court decided to curtail student free speech rights and allow high school administrators greater liberty to censor student newspapers in *Hazelwood v. Kuhlmeier*, 484 U.S. 260 (1988). Nonetheless, Tien cites *Linmark Association v. Township of Willingsboro*, 431 U.S. 85, 96 (1977) and *Griswold v. Connecticut*, 381 U.S. 479, 482 (1965) which said that "the State may not, consistently with the spirit of the First Amendment, contract the spectrum of available knowledge." He also quotes the Ninth Circuit observation in *Monteiro v. Tempe Union High School District*, 158 F.3d 1022, 1031 (9th Cir. 1998):

> …that a student is required to read a book does not mean that he is being asked to agree with what is in it.…a necessary component of any education is learning to think critically about offensive ideas—without that ability one can do little to respond to them.

Board of Education, Island Trees Union Free School District No. 26 v. Pico, 457 U.S. 874 (1982) apparently indicates a requirement that schools have a First Amendment duty to inform parents about what books are banned in order to maintain censorship within constitutional limits. Suppression of information in school libraries must be based on "established, regular and facially unbiased procedures for the review of controversial materials." Any technological solution for blocking Internet content "must respect parental determinations of what their children may see or read, without subjecting either parent or child to undue burdens." [21] *Lamont v. Postmaster General*, 381 U.S. 301, 307 (1965) suggests that schools may not put the burden on parents to opt out of blocking since the government may not impose affirmative obligations on one to receive information.

Impact on Schools

Parents, teachers, school administrators, and school boards can protect students from potentially harmful material more effectively if they implement Internet access in the schools with an understanding of the relevant law, research, and social and cultural implications of their decisions about whether and how to install Internet blocking software.

Section 3 Methodology

The Internet blocking software study methodology consists of these top-level steps:

- Determine study parameters
- Extract topics from state-mandated curriculums into database
- Generate search strings
- Generate web page lists
- Test web pages against Internet blocking products
- Verify blocking software blocking codes
- Compare and analyze results

Determine Study Parameters

Researchers began by selecting which material to study. Specifically, they chose which state curriculums to study, which search engine to use, and which Internet blocking software packages to test.

1) Choose curriculums to study.

   Researchers chose curriculums from the following states for the following reasons:

   - California has the nation's largest public school system. [15]
   - Massachusetts is the state with the first public high school in the United States. [1]
   - North Carolina represents a more rural sector of American society than the other two states. [30]

   Curriculums from these three states provide a wide cross-section of the American educational system and the values it represents.

   In light of the current trend of increasing use of the Internet by young children, researchers chose to study topics from curriculums designed for pre-kindergarten to grade 12.

In order to perform an exhaustive study, researchers included every topic mandated by the state curriculums.

2) Choose search engine.

Researchers chose Google, the largest search engine on the World Wide Web [10]. Google's unique search algorithm produces highly relevant search results.

Because Google accepts no more than ten search terms per search query, researchers had to determine a method for reducing topic texts to ten words or less, as described in "Generate Search Strings" below.

In order to generate a large enough sample size of web addresses to test, the researchers obtained up to 50 search result web addresses for each curriculum topic.

3) Choose Internet blocking software packages.

The researchers chose N2H2's Bess and SurfControl's SurfControl Internet blocking software because the two Internet blocking software packages chose are reportedly the most widely used Internet blocking software in U.S. schools. The researchers used N2H2 Bess and SurfControl Web Filter 4.0, the server-based product sold to schools.

- A study commissioned by the U.S. Department of Justice determined that N2H2's Bess is the most effective Internet blocking program available. [29]

- SurfControl claims the largest market share of any Internet blocking software company with its SurfControl (formerly CyberPatrol) product. [2]

Extract Topics from State-Mandated Curriculums into Database

The next part of this study examined the chosen curriculums and recorded the observations into a comprehensive database. To transcribe the school curriculums, researchers recorded the topics, each of which included a grade-level designation and a hierarchy of broader categories. The leftmost column of categories contained general subjects such as "science," while further right columns held more specific topics, such as "kinetic energy." Researchers used a maximum of seven hierarchical category levels for each topic. The compiled database both aided in the assessment of the curriculum and serves as an accurate record for any independent audits of this study.

Researchers used this procedure to extract data from each state-mandated curriculum and compile a curriculum database.

1) Find and store a copy of each state-mandated curriculum:

- California curriculum obtained on June 16, 2002, from http://www.cde.ca.gov/board/ [3]

- Massachusetts curriculum obtained on January 10, 2002, from http://www.doe.mass.edu/frameworks/current.html [14]

- North Carolina curriculum obtained on August 26, 2002, from http://www.ncpublicschools.org/curriculum/ [16]

2) Familiarize yourself with the curriculum topic areas such as "Arts."

3) Identify all top-level subject categories in the curriculum.

4) Identify subcategories within each curriculum category.

5) Identify topics within each curriculum subcategory.

6) Record each category, subcategory, and topic combination in a database entry.

   - Use copy and paste functions as much as possible to extract the exact curriculum topic verbatim.

   - Give each category or topic its own cell.

   - Add a row for each category, subcategories, and topic combination as needed.

7) Label appropriate grade level corresponding to each curriculum topic.

   - For pre-kindergarten and kindergarten, assign a value of 0 for grade level.

   - For curriculum topics designed for multiple grades, identify the intended range (e.g. assign 5-8 for grades five through eight)

8) Moving across the spreadsheet from left to right, the level of detail should become more specific as the reader progresses from category to subcategories to topic (refer to example spreadsheet in Appendix A).

Generate Search Strings

Having compiled the curriculum database, the researchers next created search phrases for every line of the curriculum. These search phrases, or search strings, consisted of the most important features of each topic line. Researchers attempted to limit the search strings to no more than 10 words because Google limits each query to a maximum of 10 words. Placing double quotation marks around a series of words or phrase generates websites that contain only that explicitly ordered combination. For example, searching for "United States" will yield different results than searching for "United" "States". If the topic were "The History of the United States," the researchers would include pages discussing "United States History" in the search results by searching for "history" and "United States" rather than placing the entire topic text within the quotation marks.

The researchers introduced a small degree of subjectivity into the study in distinguishing the search strings. However, determining appropriate search strings served the study's purpose better than entering the full curriculum, which would have in most cases limited the search to search results that used phrasing identical to that of each curriculum. Clearly, students would not necessarily enter searches identical to the state-mandated

curriculum topics, but the key words used for the searches should be similar to student searches performed in those topic areas.

The researchers used the following procedure to generate search phrases:

1) Choose words from each topic description that convey the essence of each line of the curriculum.

2) Limit the search phrase to 10 words by culling the topic text down to that limit.

3) Place double quotation marks around any combination of words that would most likely fit within the topic only if they occurred in that specific phrase. Try to limit word combinations to two words (e.g. “United States” or “Molecular Biology,” not “social structures of civilized Japan.”)

4) Collect each search phrase into a single column in the row that corresponds to the category, subcategories, and topic combination from which the researcher generated that search phrase.

Using this system, researchers generated search strings using text culled directly from each state-mandated curriculum.

Generate Web Page Lists

Researchers entered the list of search phrases into a specially developed software application that ran each phrase through the search engine and recorded all of the up to 50 web page search results per topic in a database.

The researchers used the following procedure to generate web page lists:

1) Run search strings through the search engine.

2) Tabulate web addresses from search results.

If a web page appeared more than once in a set of search results, the researchers entered the page into the database as many times as it appeared in search results.

Test Web Pages Against Internet Blocking Software

Researchers then tested each web address obtained above against the blocking software. They recorded each blocked page alongside the name of the software that blocked that page and the blocking code or codes specified by each Internet blocking software product.

The researchers used the following procedure to refine the web page lists:

1) Test web addresses against each blocking software product.

2) Record which websites are inaccessible, unblocked, or blocked, and if blocked, note which blocking code or codes the blocking software specified.

In the case of the SurfControl blocking software, the web addresses were tested against a web-based blocking software test tool provided by SurfControl. A SurfControl representative confirmed that the SurfControl test tool provides the same results as the product sold to schools.

For N2H2's Bess product, the web addresses were tested against a Bess installation at a public high school. Schools will install N2H2 Bess in various configurations, so this installation of Bess reflects the settings at that school only, although the researchers speculate that the Bess settings for the school in this study are similar to those of many other schools. Additionally, the blocking codes used by Bess are the same for every installation, just the decision by the school of whether or not to activate particular blocking codes varies according to the installation.

Verify Blocking Software Blocking Codes

In certain conditions, determining which content is objectionable can be subjective. Blocking software manufacturers may assign a web page an appropriate block code but still block the web page incorrectly; conversely, they may assign the wrong block code, even if the blocking software blocks a web page appropriately. For example, material about contraceptives inappropriate for an elementary school student may be entirely necessary for a high school student. [21] Material by the Ku Klux Klan may be hate speech in one context or primary source material in the context of a research report about the history of the American south. Internet blocking companies or schools configuring the Internet blocking software may, and often do, block "controversial" web pages due to political, social, or cultural biases, regardless of whether they fall within the federally mandated guidelines for material that educators must block their students from accessing. Thus, researchers tested two conditions: whether blocking software manufacturers assigned web pages the appropriate blocking code, and whether the blocking software blocked sample web pages appropriately.

To verify that Internet blocking companies assigned the correct block codes to web pages blocked in the study, researchers examined a statistically significant sample of the pages blocked by each blocking product and checked block code assignments using the block code definitions provided by the blocking companies (and included in Appendix B).

The researchers tested for overblocking by checking a sample of pages blocked by each blocking product to determine if a court reviewing a legal challenge would likely agree that CIPA authorized blocking of those web pages. Additionally, the researchers also tested for overblocking by rating the same sample of blocked pages using the Internet Content Rating Association rating system.

To detect potential underblocking, the researchers also ran some of the unblocked web pages through a set of pornographic key word searches in an attempt to find any web pages that the Internet blocking software neglected to block according to its block code definitions related to CIPA requirements.

Compare and Analyze Results

The primary objective of the study was to analyze the differences between the degree of access to curriculum-related web pages on computers running with and without Internet blocking software. The study also determined the percentage of web pages blocked with the blocking software in each major category, each state, and each grade level.

Comparing the samples offered evidence of the ineffectiveness of blocking products at both allowing access to educationally-appropriate pages and at blocking access to pages that are likely legally inappropriate for use in schools, although the courts have not provided much clear direction as to which specific materials are illegal in schools beyond the general categories of verboten content specified in CIPA and other laws. Sometimes, the researchers simply determined whether or not the Internet blocking software blocked web pages as advertised since the block codes were clearly not within the realm of harmful to minors content prohibited by CIPA or other laws addressing information access within schools.

The researchers used the following procedure to analyze the results:

1) Determine the statistical significance of differences in results between the samples.

2) Determine the percentage of web pages blocked inappropriately with the blocking software in each major category, state, and grade level, as well as by blocking product.

3) Sample web pages inaccessible while using blocking software – check for educationally appropriate material (overblocking).

4) Sample websites accessible while using blocking software – check for likely legally inappropriate material (underblocking).

Section 4 Considerations

The study raises the following considerations related to the curriculums, the search engine, Internet blocking software products, Internet content rating systems, and the law, as well as an attempted correspondence between blocking software and the law.

Curriculum Considerations

The following considerations are related to state-mandated curriculums:

- The curriculums contain a variety of typographical errors, adding a degree of ambiguity as to what the researchers should actually record in the curriculum database. For this study, researchers recorded the curriculum topics without correcting any errors.

- The curriculums may be in need of revision. States publish various portions of their curriculums at different times, and the interval between the newest and oldest portions of the curriculum can be as long as five years.

Search Engine Considerations

The following considerations are related to search engines:

- Google's search engine limits the number of words processed from each search phrase to no more than ten. Some topics contained more than ten crucial keywords. Results from searches like these may not accurately reflect the full extent of the curriculum topic in question.

- Because many of the search strings contained very specific references to curriculum material, some of the pages found by the search engine were themselves curriculum sites. Individual school system, educational organization, or teacher web pages often mirrored the state curriculums, resulting in a multitude of copies that appeared in the searches. Researchers excluded these copies of curriculum sites for some portions of the analysis to the extent possible for this study by pruning out data for web addresses that included "k12," sometimes with related state codes, such as "ca" for California. However, it is interesting to note that the Internet blocking software also blocked curriculum sites, presenting a possible difficulty to teachers.

- Search results do not always related directly to the search query because the search engine cannot always provide results based on the correct context of the query. However, the researchers believe that use of the Google search engine is the most objective way available at this time to obtain a list of web pages related to the curriculum topics under study.

- The search engine sometimes returned multiple occurrences of the same web page in search results and the researchers included all occurrences of a web page in search results in the study database.

Blocking Software Considerations

The following considerations are related to blocking software:

- Current technologies simply cannot produce a level of programming sophisticated enough to block all objectionable materials and only those materials. No group of humans can adequately survey the increasingly enormous wealth of information online, and no machine possesses the ability to determine which sites fall within the legal definition of "harmful to minors," which likely varies from community to community. As explained by the court that ruled CIPA unconstitutional for libraries: "category definitions and categorization decisions are made without reference to local community standards." [28]

- Constant redesign and manipulation of web pages makes the task of analyzing and reanalyzing the content for harmful to minors material even more difficult. Employees at blocking software companies often make mistakes about which pages to block using which blocking codes. Such human errors include "common sense" decisions about which block codes to use regardless of the specific block code definitions, as well as just plain human error. Automated mechanisms used to assign block codes for web pages often miscategorize those pages.

- The court ruling CIPA unconstitutional for libraries also mentions: "No category definition used by the blocking programs is identical to the legal definitions of obscenity, child pornography, or material harmful to minors, and, at all events, filtering programs fail to block access to a substantial amount of content on the Internet that falls into the categories defined by CIPA." [28] For further discussion, see the "Attempted Correspondence" heading later in this section.

- As explained by the court that ruled CIPA unconstitutional for libraries: "there is no judicial involvement in the creation of filtering software companies' category definitions and no judicial determination is made before these companies categorize a Web page or site." [28]

- Internet blocking companies sometimes do not define block codes consistently in a logical manner. For example, N2H2 Bess' block code definition for Chat blocks an entire website for having one or more page that offers an online chat facility or provides software for online chatting (although it is ambiguous about SMS or instant messaging), and the N2H2 Bess block code definition for Message/Bulletin Board covers online bulletin boards, forums, or message boards. SurfControl's Chat block code covers web-based chat and SurfControl's Web-based E-mail block code covers web-based email accounts and SMS or instant messaging, but neither code appears to cover online bulletin boards, forums, or message boards. For further discussion, see the "Attempted Correspondence" heading later in this section.

- Determining which content is objectionable is subjective. What is harmful content to a seven-year-old child and a seventeen-year-old child may be entirely different. Material

about contraceptives inappropriate for an elementary school student may be entirely necessary for a high school student. [21] Material by the Ku Klux Klan may be hate speech in one context or primary source material in the context of a research report about the history of the American south. Internet blocking companies or schools configuring the Internet blocking software may block "controversial" web pages due to political, social, or cultural biases, regardless of whether they fall within federally mandated guidelines for material that educators must block their students from accessing. [19] [21]

- Blocking software blocks access to sites that do not directly contain content that is harmful to minors but could act as a gateway to such materials. "Anonymizers" and "translators" remain inaccessible while operating Internet blocking software because students could potentially use these sites to circumvent the software's control of content. The helpful, non-infringing aspects of these websites are lost to students even though they serve legitimate pedagogical purposes. [5]

- Schools may choose Internet blocking software code settings according to recommendations from an Internet blocking software company or may opt for custom settings of the product, affecting the quantity and types of websites blocked, as well as the amount of overblocking and underblocking.

- Blocking software companies often choose to block all of the pages on site when any one page on the site contains some content that fits into one of the block codes. Some blocking software blocks entire Internet sub-network addresses or Internet domains based on content found within one small part of the sub-network or domain. For this study, the researchers judged each page of each site on its own merit, noting that an entire website, sub-network, or domain should not be restricted simply because some small portion of the site contains materials that fit one or more of the block code definitions.

- Some Internet blocking companies have created certain Internet software blocking codes to explicitly permit access to pages assigned these "allow" or "exception" codes, rather than blocking pages assigned those codes.

- One blocking software company sold student web browsing data through a reseller to the Department of Defense and potentially commercial customers, raising concerns about the commercialization of the educational environment. [31]

Rating System Considerations

Many of the same considerations that apply to Internet blocking software also apply to Internet content rating systems, although some considerations are completely different. This study focuses on the ICRA's rating system. [11]

- Rating system category definitions and categorization decisions are made without reference to local community standards.

- The ICRA is probably the most widely used Internet content rating system, yet there are other content rating systems.

- The ICRA rating system relies on website owners rating their own web page content. There is no law requiring website owners to rate their content, so the vast majority do not. Those website owners who do rate their content may use another rating system besides the ICRA rating system.

- Constant redesign and manipulation of web pages makes the task of analyzing and reanalyzing the content for harmful to minors material even more difficult.

- Website owners who do rate their content using the ICRA rating system may rate pages inconsistently by misapplying the category definitions provided by the rating system, whether intentionally or not.

- No category used by the ICRA rating system is identical to the legal definitions of obscenity, child pornography, or material harmful to minors. For further discussion, see the "Attempted Correspondence" heading later in this section.

- There is no judicial involvement in the creation of rating system category definitions and no judicial determination is made before website owners categorize a web page or site.

- Internet content rating organizations sometimes do not define block codes consistently in a logical manner. For example, the ICRA rating system's Chat code covers both moderated and unmoderated chat services, but not online message boards, forums, or bulletin boards, SMS or instant messaging, unlike similar codes used by the Internet blocking products. For further discussion, see the "Attempted Correspondence" heading later in this section.

- Determining which content is objectionable is subjective.

- Schools may choose Internet rating system settings according to recommendations from outside sources or may opt for custom settings of the product, affecting the quantity and types of websites blocked, as well as the amount of overblocking and underblocking.

- Schools using a rating system approach may decide to block all unrated web pages.

Legal Considerations

The Preface to this document goes into considerable detail about the provisions of CIPA, legal challenges to CIPA, and other related litigation and legal definitions. The researchers have relied on the legal definitions of illegal obscenity, child pornography, and harmful to minors content in making determinations about what types of blocking are appropriate or inappropriate in this study.

CIPA focuses specifically on "visual depictions" of illegal obscenity, child pornography, and harmful to minors content. Therefore, CIPA does not address specifically any non-visual depictions, such as written materials without images that a court might rule are illegally obscene.

The researchers sought to measure the extent of both visual and non-visual depictions of illegal obscenity, child pornography, and harmful to minors content and have reported results specific to the visual depictions requirement of CIPA as well as to non-visual depictions.

It goes without saying that only a court can make the final determination as to illegal obscenity, child pornography, and harmful to minors content, yet the researchers found that relatively few web pages examined as part of this study would be at all relevant to those categories. In fact, the researchers found no examples of child pornography whatsoever. Of those web pages that could be considered illegal obscenity or harmful to minors content, the researchers determined that in almost every case a court would have little trouble in making the determination that the web pages were in fact illegal obscenity or harmful to minors under the definitions provided by CIPA and related law.

However, there were a few borderline web pages where the researchers had to make a subjective determination about the legality of content as applies to CIPA and related law. In those few cases, the researchers erred on the side of caution and marked the pages as illegal obscenity or harmful to minors content, absent a court opinion. As an example, consider a web page with a picture of what appeared to be a man grabbing the genitals of another man, although one could not distinctly see the hand or the genitals in question.

The researchers marked this page entitled “ManQuest: Nude Male Images, Drawings and Paintings” at http://161.58.50.69/gayscape/madp.html as harmful to minors content using the “actual or simulated sexual act or sexual contact” portion of the definition.

Attempted Correspondence

This table represents an attempt to set up a correspondence between the legal categories for blocking as defined by CIPA and the blocking codes provided by the Internet blocking software products researched in this study:

CIPA Definitions	N2H2 Bess Candidate Codes	SurfControl Candidate Codes	ICRA Candidate Codes
Obscenity	Pornography: includes "stories" which are not visual depictions, marked as CIPA compliant code by N2H2.	Adult/Sexually Explicit: includes "Erotic stories and textual descriptions of sexual acts" which are not visual depictions and excludes "sexual health, breast cancer, or sexually transmitted diseases (except in graphic examples)."	Nudity and Sexual Material includes non-visual depictions such as "written descriptions, oral recitation, and or audio sounds" with exceptions for artistic, educational, and medical contexts.
	Sex: "Sites that contain descriptions or depictions of sexual acts, specifically those without the intent to arouse," marked as CIPA compliant code and "optional for workstations used only by adults" by N2H2.	Sex Education: focus on contraceptives, disease, pregnancy, and boundaries, no mention of prurient interest, excludes "commercial sites that sell sexual paraphernalia."	Language: includes "explicit sexual" language but no visual depictions.
Child Pornography	Illegal: mentions "sites that promote illegal activities… activities include making or distributing child pornography," not restricted just to child pornography or just to visual depictions, not marked as CIPA compliant code by N2H2.	No correspondence to N2H2 code, except Hacking code which is not related to child pornography.	No correspondence to ICRA code, except perhaps "Material that might be perceived as setting a bad example for young children" which gave no mention of child pornography and is not restricted to visual depictions.
	Pornography: mentions child pornography but does not restrict to child pornography or visual depictions, marked as CIPA compliant code by N2H2.	Adult/Sexually Explicit: includes "Erotic stories and textual descriptions of sexual acts" which are not visual depictions and excludes "sexual health, breast cancer, or sexually transmitted diseases (except in graphic examples)."	Nudity and Sexual Material includes non-visual depictions such as "written descriptions, oral recitation, and or audio sounds" with exceptions for artistic, educational, and medical contexts.
	Sex: no specific mention of child pornography, marked as CIPA compliant code and "optional for workstations used only by adults" by N2H2.	Sex Education: focus on contraceptives, disease, pregnancy, and boundaries, no mention of child pornography, excludes "commercial sites that sell sexual paraphernalia."	Nudity and Sexual Material includes non-visual depictions such as "written descriptions, oral recitation, and or audio sounds" with exceptions for artistic, educational, and medical contexts.

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CIPA Definitions (cont.)	N2H2 Bess Candidate Codes (cont.)	SurfControl Candidate Codes (cont.)	
Harmful to Minors	Nudity: specifically says "not intended to be sexually arousing or erotic," not marked as CIPA compliant code by N2H2.	Does not match Adult/Sexually Explicit because that code is intended to include sexually arousing or erotic materials.	Nudity and Sexual Material includes non-visual depictions such as "written descriptions, oral recitation, and or audio sounds" with exceptions for artistic, educational, and medical contexts.
	Pornography: includes "stories" which are not visual depictions, marked as CIPA compliant code by N2H2.	Adult/Sexually Explicit: includes "Erotic stories and textual descriptions of sexual acts" which are not visual depictions and excludes "sexual health, breast cancer, or sexually transmitted diseases (except in graphic examples)."	Nudity and Sexual Material includes non-visual depictions such as "written descriptions, oral recitation, and or audio sounds" with exceptions for artistic, educational, and medical contexts.
	Sex: "Sites that contain descriptions or depictions of sexual acts, specifically those without the intent to arouse," marked as CIPA compliant code and "optional for workstations used only by adults" by N2H2.	Sex Education: focus on contraceptives, disease, pregnancy, and boundaries, no mention of prurient interest, excludes "commercial sites that sell sexual paraphernalia."	Nudity and Sexual Material includes non-visual depictions such as "written descriptions, oral recitation, and or audio sounds" with exceptions for artistic, educational, and medical contexts.
	Tasteless/Gross: mentions "excretory functions (vomiting,urinating, or defecating)," but doesn't restrict to visual depictions, not marked as CIPA compliant code by N2H2.	No correspondence to N2H2 code.	No correspondence to ICRA code, except perhaps "Material that might be perceived as setting a bad example for young children" which mentioned "urinating in public" and is not restricted to visual depictions.

In no case do the block codes defined by the Internet blocking software companies restrict themselves specifically to visual depictions of obscenity, child pornography, and in the case of minors, harmful to minors materials. Even if the blocking companies coded every web page correctly, it would not be possible to use these blocking product codes to restrict Internet blocking specifically to the categories required by CIPA.

Perhaps in an attempt to remedy the situation, N2H2 Bess offers the following exception codes suggested for CIPA compliance:

- Education

  "allows access to sites that contain material that may belong to another category, such as Sex, Nudity, or Violence, but that relates to an educational topic such as classic literature, history, art, or sex education."

- History

  "allows access to sites that contain material that may be in another category, such as Sex or Violence, but that is non-fictional and historically significant."

- Medical

  "allows access to sites that contain material that may belong to another category, such as Nudity or Tasteless/Gross, but that relates to the study or practice of medicine."

- Text/Spoken Only

  "allows sites that contain material that may belong to another category, such as Pornography, but that is strictly in text or spoken word format. For example, the Text/Spoken Only category distinguishes written erotica from graphic pornography sites."

SurfControl offers the following codes which could be used as exception codes, although the company refused to make any recommendations about whether or not to do so:

- Education

  Almost any page related to education.

- Health & Medicine

  Almost any page related to health and/or medicine.

- Lifestyle & Culture

  "Homelife and family-related topics, including parenting tips, gay/lesbian/bisexual (non-pornographic sites), weddings, births, and funerals. Foreign cultures, socio-cultural information"

- Sex Education

  Focus on contraceptives, disease, pregnancy, and boundaries, with no mention of prurient interest, and excluding "commercial sites that sell sexual paraphernalia."

Even taking the actual or potential exception codes into consideration, SurfControl provides no mechanism for restricting blocking to visual depictions, instead of also textual depictions of obscenity, child pornography, and in the case of minors, harmful to minors materials.

N2H2 Bess offers the "Text/Spoken Only" code, but since that code did not appear even once in the sample of nearly a million web pages related to state-mandated curriculums tested at an actual high school, the researchers were not able to confirm its operation.

Section 5

Results

The research results of this study fit into the following categories:

- Overblocking
- Underblocking
- Overall blocking rates
- Blocking by category/topic, including categorization accuracy analysis
- Blocking by state
- Blocking by grade
- Blocking by product
- Bad address and unreachable statistics

Overblocking

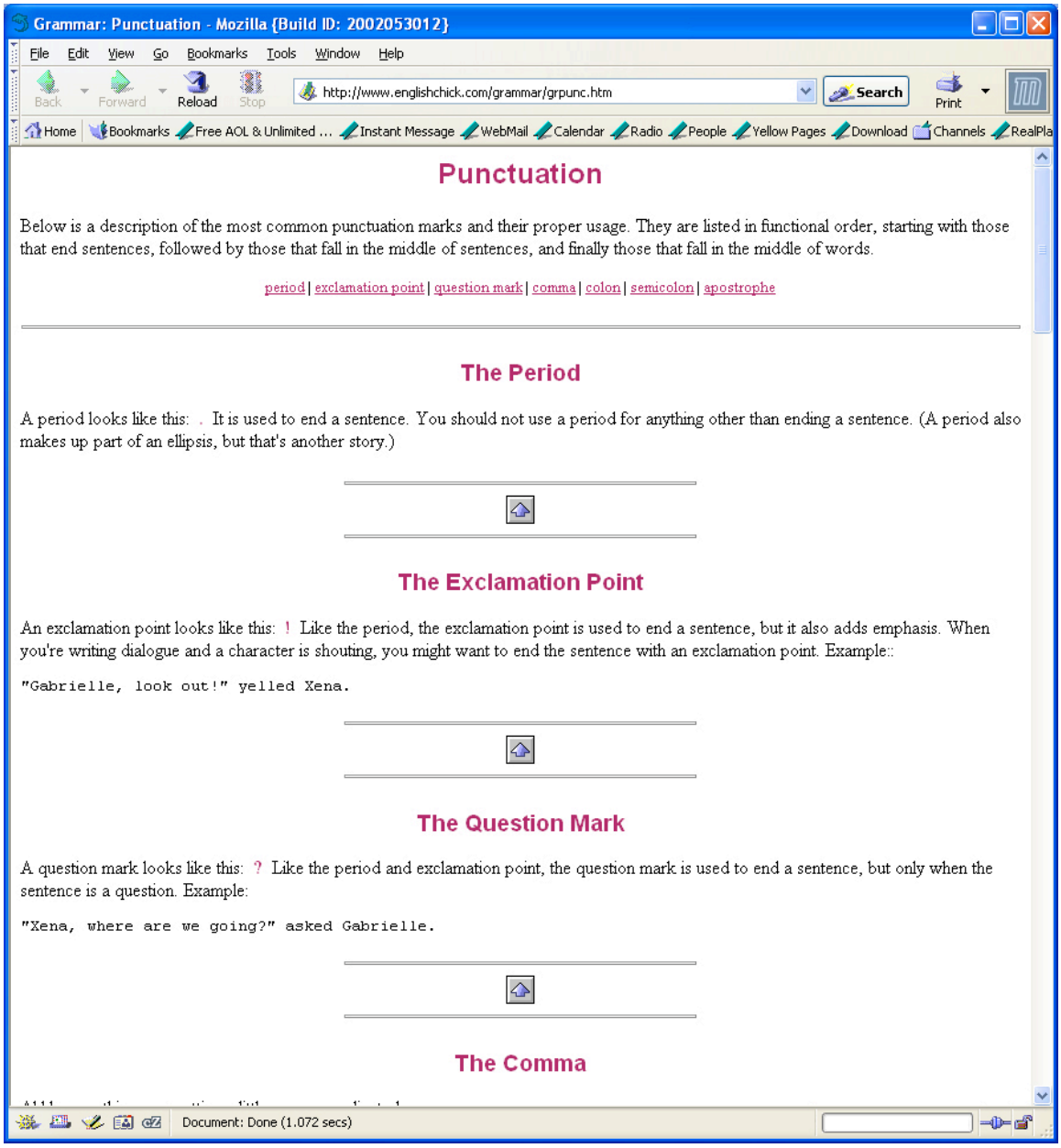
The study found the following results regarding blocking software overblocking:

- For every web page blocked as advertised, blocking software blocks one or more web pages inappropriately, either because the web pages are miscategorized or because the web pages, while correctly categorized, do not merit blocking.
- Schools that implement Internet blocking software even with the least restrictive settings will block at a minimum tens of thousands of web pages inappropriately, either because the web pages are miscategorized or because the web pages, while correctly categorized, do not merit blocking.
- Blocking software products miscategorized many of the web pages they block—assigning the wrong block codes to between a third and a half of the web pages related to state-mandated curriculums blocked depending on the blocking software.
- Of all pages related to state-mandated curriculums blocked by blocking products, the products blocked only 1-3% of those web pages to CIPA's criteria for blocking visual depictions of illegally obscenity, child pornography, or harmful to minors content. That means that of the web pages related to state-mandated curriculums, blocking software products blocked 97-99% of the web pages blocked using non-standard, discretionary, and potentially illegal criteria beyond what is required by CIPA.

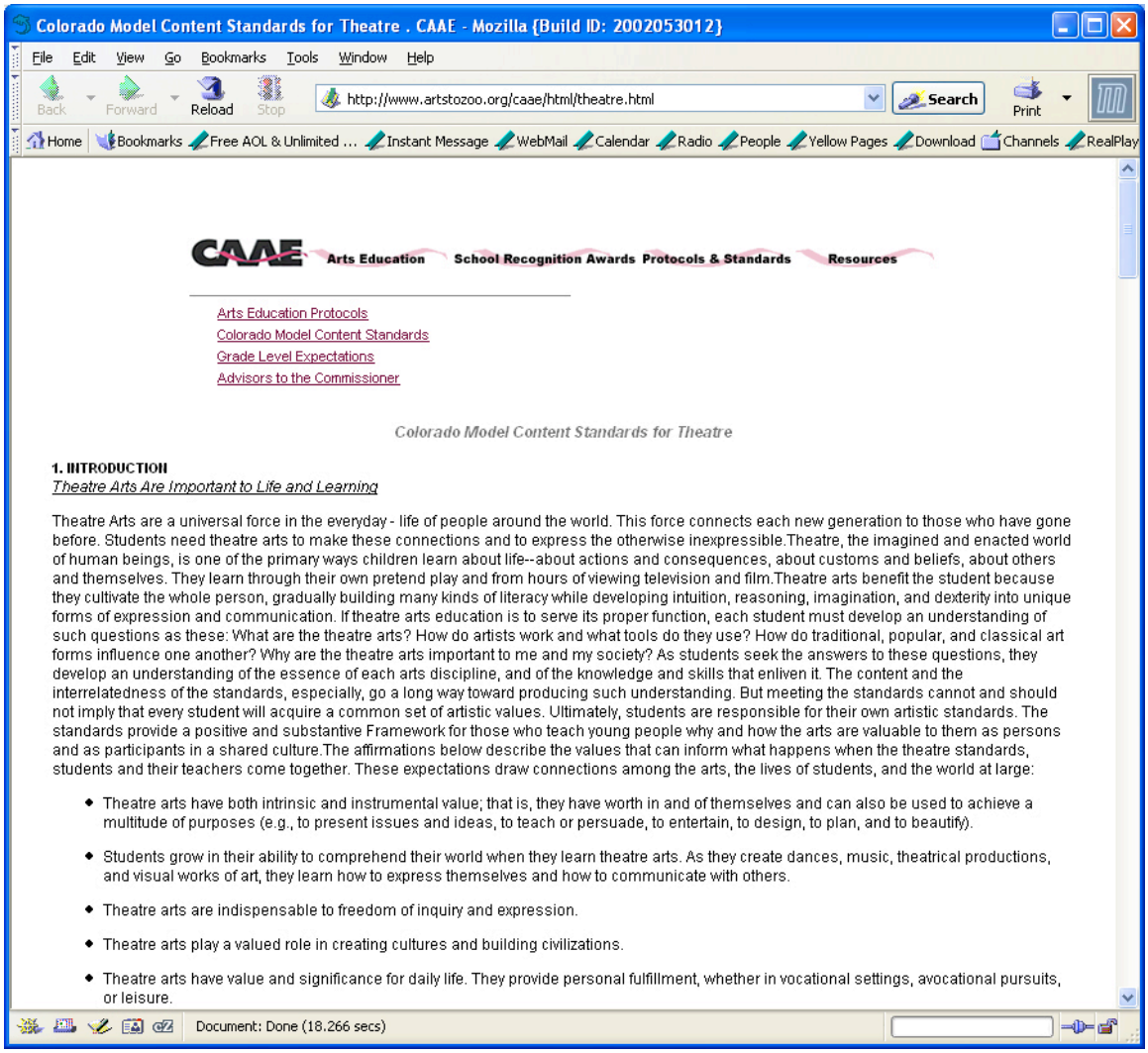
Overblocking Types

Researchers came across two types of overblocking in the research for this study:

1) Miscategorization or Inappropriate Coding: Internet blocking company assigned web pages an inappropriate blocking code or codes. For example, the SurfControl Internet blocking software product assigned a Punctuation Primer located at http://www.englishchick.com/grammar/grpunc.htm the block code Adult/Sexually Explicit, even though the most controversial topics on that page are the period and the exclamation point. Perhaps "period," as in menstruation, was the trigger?

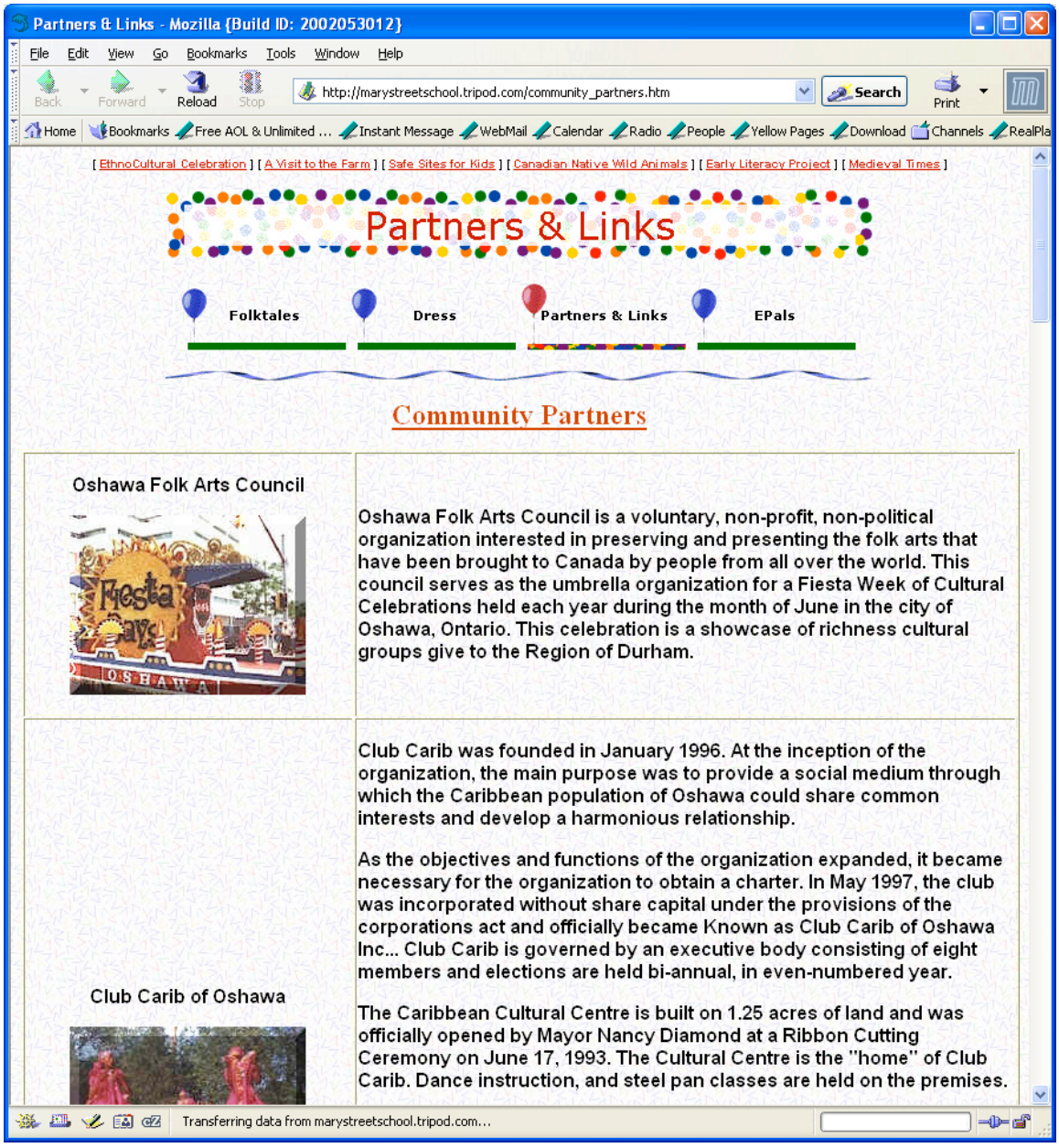


In another example, N2H2 Bess assigned a Colorado Arts Education page on Colorado Model Content Standards for Theatre a Pornography block code:



2) Inappropriate Content Evaluation: web pages assigned an apparently correct blocking code or codes, but still not blocked appropriately. N2H2 blocks wide swathes of the Web under the Free Pages, Electronic Commerce, Message/Bulletin Board, and Recreation/Entertainment categories.

   For example, N2H2 Bess assigned a page describing community partners of the Mary Street School located at http://marystreetschool.tripod.com/community_partners.htm the block code "Free Pages" because it is hosted for free at Tripod, even though the page includes pedagogically valuable information.



The N2H2 Bess definition for the Electronic Commerce block code seems much more concerned with other content areas than with confronting commercialism within schools:

> Electronic Commerce
>
> Sites that allow users to make online purchases. Many e-commerce sites pose a risk to users by offering direct access to items that would normally be filtered under other categories such as Weapons, Profanity, Lingerie, or Pornography.

If the e-commerce sites offer access to Weapons, Profanity, Lingerie, or Pornography, why not block them using those block codes? Or should everything that appears on an electronic commerce site get blocked simply because it might be associated with some other blocking code? For example, N2H2 Bess blocks proceedings of Association for Computing Machinery conferences under the Electronic Commerce code.

Overblocking Standards

To determine overblocked pages, researchers sampled the overall list of blocked pages and evaluated each one to see if the blocking software manufacturer assigned codes correctly, as well as if, even with an apparently correct blocking code, the product should have blocked the web page.

It was difficult to come up with any standard for determining whether or not a blocking product should block a given web page beyond the "I know it when I see it" standard, which was so subjective that the researchers had to reject it for this study.

Instead, the researchers decided to report overblocking rates that reflected what a U.S. court would reasonably find required by CIPA in according to average U.S. community standards as described in this document's Preface. This formulation was sometimes also subjective, although in surprisingly few cases. It provided a much more stable means for measuring overblocking.

The caveat to the CIPA overblocking method is whether it is permissible for schools to use blocking technology to block web pages related to state-mandated curriculums using some standard other than CIPA. The researchers predict that the public policy in this arena will develop further over time.

As an additional independent and less subjective check on overblocking, the researchers rated a sample of the web pages using the Internet Content Rating Association rating system as described below.

Overblocking Rates

When using the criterion of blocking only web pages a court would reasonably find required by CIPA in according to average U.S. community standards, the researchers found that the Internet blocking software has overblocking rates of 97-99% of web pages related to state-mandated curriculums depending on the blocking product. That means that according to the researchers only 1-3% of the blocked pages related to state-mandated curriculums fit into the CIPA categories of illegal obscenity, child pornography, or harmful to minors content. No child pornography was found.

When the definitions of CIPA are extended to include non-visual depictions of illegal obscenity, child pornography, or harmful to minors content, the researchers found that the Internet blocking software has overblocking rates of 95-98% of web pages related to state-mandated curriculums depending on the blocking product. That means that according to the researchers only 2-5% of the blocked pages related to state-mandated curriculums fit into the CIPA categories of illegal obscenity, child pornography, or harmful to minors content. No child pornography was found.

N2H2 Bess Overblocking: Non-Visual Depictions

Researchers tested 315 pages spread evenly over the entire sample of web pages blocked by N2H2 Bess and found that of the 294 pages that were accessible, the blocking software overblocked 98.98% ±0.30% (95% confidence interval) (291 web pages) of web pages related to state-mandated curriculums when using the criterion of blocking only web pages a court would reasonably find required by CIPA according to average U.S. community standards. That means that according to the researchers 1.02% ±0.30% of the pages blocked by N2H2 Bess related to state-mandated curriculums fit into the CIPA categories of illegal obscenity, child pornography, or harmful to minors content. No child pornography was found.

N2H2 Bess Overblocking: Visual and Non-Visual Depictions

Researchers tested 315 pages spread evenly over the entire sample of web pages blocked by N2H2 Bess and found that of the 294 pages that were accessible, the blocking software overblocked 98.30% ±0.39% (95% confidence interval) (289 web pages) of web pages related to state-mandated curriculums when using the criterion of blocking web pages a court would reasonably find required by CIPA *along with non-visual depictions* of illegal obscenity, child pornography, or harmful to minors content according to average U.S. community standards. That means that according to the researchers 1.70% ±0.39% of the pages blocked by N2H2 Bess related to state-mandated curriculums fit into the CIPA categories of illegal obscenity, child pornography, or harmful to minors content along with non-visual depictions of illegal obscenity, child pornography, or harmful to minors content according to average U.S. community standards. No child pornography was found.

SurfControl Overblocking: Non-Visual Depictions

Researchers tested 352 pages spread evenly over the entire sample of web pages blocked by SurfControl and found that of the 324 pages that were accessible, the blocking software overblocked 97.22% ±0.52% (95% confidence interval) (315 web pages) of web pages related to state-mandated curriculums when using the criterion of blocking only web pages a court would reasonably find required by CIPA in according to average U.S. community standards. That means that according to the researchers 2.78% ±0.52% of the pages blocked by SurfControl related to state-mandated curriculums fit into the CIPA categories of illegal obscenity, child pornography, or harmful to minors content. No child pornography was found.

SurfControl Overblocking: Visual and Non-Visual Depictions

Researchers tested 352 pages spread evenly over the entire sample of web pages blocked by SurfControl and found that of the 324 pages that were accessible, the blocking

software overblocked 95.37% ±0.66% (95% confidence interval) (309 web pages) of web pages related to state-mandated curriculums when using the criterion of blocking web pages a court would reasonably find required by CIPA *along with non-visual depictions* of illegal obscenity, child pornography, or harmful to minors content according to average U.S. community standards. That means that according to the researchers 4.63% ±0.66% of the pages blocked by SurfControl related to state-mandated curriculums fit into the CIPA categories of illegal obscenity, child pornography, or harmful to minors content along with non-visual depictions of illegal obscenity, child pornography, or harmful to minors content according to average U.S. community standards. No child pornography was found.

Verification by Internet Content Rating Association Rating System

To provide more independent verification of the inappropriate blocking, the researchers used the rating system developed by the Internet Content Rating Association (ICRA) to rate each web page according to the ICRA's rating system including blocking codes of Nudity and Sexuality, Violence, Other Topics (such as promotion of tobacco, alcohol, or drug use, discrimination, and gambling), and Chat. [11] Although the researchers in this study retain a healthy skepticism of the effectiveness of the ICRA rating system, many accept it as a standard, including AOL and Yahoo!. [12]

The ICRA data confirmed the conclusion that a relatively small number of web pages returned as search results from state-mandated curriculum topics would have any content for which a court would likely require blocking under CIPA. A maximum of between 5.10% and 9.26% of the web pages rated using the ICRA content rating system could be relevant to blocking as required by CIPA and this represents only an upper bound and not an actual figure, since the ICRA content rating system does not distinguish visual from non-visual depictions and includes items such as "passionate kissing" and "obscured or implied sex," among other specific Nudity and Sexual Material ratings that are not relevant to CIPA.

The researchers rated a distributed sample of web pages for both blocking software products using the Internet Content Rating Association (ICRA) content rating system. Although the researchers collected data using all the ICRA ratings, the study report focuses on the Nudity and Sexual Material rating data since that is the only data relevant to Internet blocking as required by CIPA. The researchers present the ICRA data for other ratings just for reader interest.

Please note that the ICRA content rating system provides for context ratings, such as artistic, educational, or medical "and is suitable for young children" intended to provide exceptions to the Nudity and Sexual Material ratings.

N2H2 Bess ICRA Data

Testing a distributed sample of 294 web pages, the researchers found that 94.56% had no rating related to Nudity and Sexual Material. 4.76% had a rating of "Obscured or implied sex" and 0.68% had a rating of "Passionate kissing." Additionally, 0.34% of the web pages rated as Nudity and Sexual Material included one or more of the three ICRA context exceptions, meaning that at least 94.90% of the web pages either had no or an irrelevant Nudity and Sexual Material rating. Of the less than 5.10% of the web pages that had a

relevant Nudity and Sexual Material rating, many of those web pages had no visual depictions, meaning that a court interpreting CIPA using average U.S. community standards would be likely to require blocking of only a much smaller percentage than 5.10% of the web pages. It was impossible to determine the exact percentage without a much more detailed examination of the data.

This 5.10% figure is significantly larger than the 1.70% figure obtained by the researchers for pages blocked by N2H2 Bess that would fit into the CIPA categories if and only if non-visual depictions not addressed by CIPA are included in both data points. This either means that N2H2 Bess is underblocking a significant portion of the sample or that the ICRA ratings are not specific enough to provide a good basis on which to determine appropriate blocking of combined visual and non-visual depictions of materials covered by CIPA categories.

For the same distributed sample of 294 web pages, the researchers found that 95.24% had no rating related to Violence. Additionally, 0.68% of the web pages rated as Violence included one of the three exceptions, meaning that at least 95.92% of the web pages either had no or an irrelevant Violence rating. Thus, the researchers found that only 4.08% of the web pages rated as Violent, for none of which a court interpreting CIPA using average U.S. community standards would likely require blocking.
For the same distributed sample of 294 web pages, the researchers found that 97.28% had no rating related to Language. In fact, only 1.02% of the web pages rated as Language included "sexually explicit" language, but ICRA's "sexually explicit" Language rating does not include any determination of visual depictions, so a court interpreting CIPA using average U.S. community standards would not likely require blocking of any of these pages.

For the same distributed sample of 294 web pages, the researchers found that 96.60% had no rating related to Other Topics, and for those web pages that did rate in Other Topics a court interpreting CIPA using average U.S. community standards would not likely require any blocking.

For the same distributed sample of 294 web pages, the researchers found that 100.00% had no rating related to Chat, and a court interpreting CIPA using average U.S. community standards would not likely require any blocking of those web pages in any case.

SurfControl ICRA Data

Testing a distributed sample of 324 web pages, the researchers found that 81.17% had no rating related to Nudity and Sexual Material. 13.58% had a rating of "Obscured or implied sex" and 0.62% had a rating of "Passionate kissing." Additionally, at least 9.57% of the web pages rated as Nudity and Sexual Material included one or more of the three ICRA context exceptions, meaning that at least 90.74% of the web pages either had no or an irrelevant Nudity and Sexual Material rating. Of the less than 9.26% of the web pages that had a relevant Nudity and Sexual Material rating, many of those web pages had no visual depictions, meaning that a court interpreting CIPA using average U.S. community standards would be likely to require blocking of only a much smaller percentage than 9.26% of the web pages. It was impossible to determine the exact percentage without a much more detailed examination of the data.

This 9.26% figure is significantly larger than the 4.63% figure obtained by the researchers for pages blocked by SurfControl that would fit into the CIPA categories if and only if non-

visual depictions not addressed by CIPA are included in both data points. This either means that SurfControl is underblocking a significant portion of the sample or that the ICRA ratings are not specific enough to provide a good basis on which to determine appropriate blocking of combined visual and non-visual depictions of materials covered by CIPA categories.

For the same distributed sample of 324 web pages, the researchers found that 95.99% had no rating related to Violence. Additionally, 2.47% of the web pages rated as Violence included one of the three exceptions, meaning that at least 98.46% of the web pages either had no or an irrelevant Violence rating. Thus, the researchers found that only 1.64% of the web pages rated as Violent, for none of which a court interpreting CIPA using average U.S. community standards would likely require blocking.

For the same distributed sample of 324 web pages, the researchers found that 95.68% had no rating related to Language. In fact, only 3.70% of the web pages rated as Language included "sexually explicit" language, but ICRA's "sexually explicit" Language rating does not include any determination of visual depictions, so a court interpreting CIPA using average U.S. community standards would not likely require blocking of any of these pages.

For the same distributed sample of 324 web pages, the researchers found that 79.94% had no rating related to Other Topics, and for those web pages that did rate in Other Topics a court interpreting CIPA using average U.S. community standards would not likely require any blocking.

For the same distributed sample of 324 web pages, the researchers found that 97.53% had no rating related to Chat, and for those web pages that did rate in Chat a court interpreting CIPA using average U.S. community standards would not likely require any blocking.

Effects of Inappropriate Blocking

If Internet blocking software companies were able to remove all the inappropriate blocks, overall block rates would drop dramatically in this study. This suggests that searches on curriculum-related topics would produce very few attempts to access web pages that would be blocked by Internet blocking software and raises further questions about the effectiveness of its use, especially in light of the extensive collateral damage of overblocking.

For information on web page miscategorization, see the “Blocking by Blocking Product” section.

Underblocking

The study found the following results regarding blocking software underblocking:

- Internet blocking software was not able to detect and protect students from access to many of the relatively small quantity of apparently pornographic sites that appeared in search results related to state-mandated curriculums.

Although the study researchers understood the difficulty of locating web pages that would likely require blocking under the definitions used by CIPA, the researchers made a simple attempt to locate such web pages among the web pages that the blocking software did not block.

The researchers searched the text all unblocked web pages for the following target words: cock, pussy, cunt, fuck, buttfuck, rimjob, muff, blowjob, kink, tits, ass, erotic, cornhole, bestiality, cunnilingus, fellatio, Defecolagnia, dildo, smut, porn, smegma, watersports, bondage, bdsm, masochist, bukkake, cameltoe, twat, pubes, jackoff, xxx, trannie, cocksucker, handjob, lube, dick, spunkloving, cum, hardcore, fisting, fistfucking, and handball.

For any web page that contained three or more of the target words, the researchers examined the web page against the legal standard provided by CIPA and found 11 total occurrences of nine web pages for which CIPA would likely would require blocking, three missed by N2H2 Bess and eight missed by SurfControl. The researchers also found a total of 34 web pages that would require blocking if non-visual depictions were included, 17 for N2H2 Bess and 17 for SurfControl.

The list of web pages likely requiring blocking under CIPA included the following web pages:

- A web page left unblocked by both N2H2 Bess and SurfControl with the description Castle of Torment, Silver Moon identified by the target words cock, cunt, fuck, tits, erotic, cunnilingus, and bondage and including a picture of a naked woman chained by her wrists at http://www.adultbookshops.com/moon/Chapters/CastleTorment.htm

- A web page left unblocked by N2H2 Bess that serves as an entry to the Hustler website identified by the target words porn, xxx, and hardcore and including several pornographic pictures at http://www.pcgreetings.com/

- A web page left unblocked by N2H2 Bess that contains an ad entitled “Central Texas Gentleman Top ISO Special femsub or Femswitch” on Ambrosio’s BDSM website identified by the target words cock, erotic, bondage, bdsm, and xxx and including an image of a man lashing a full-breasted naked woman at http://www.io.com/~ambrosio/vanity/ad.html

- A web page left unblocked by SurfControl with the description “The New Supergirl in Town, Chapter 32.” identified by the target words cock, fuck, and tits and including an explicit pornographic picture located at http://www.mffb.com/julievelor/nstg32.html

- A web page left unblocked by SurfControl with the description “Online Adult XXX! The ‘original’ Online Adult Entertainment Portal...with the latest HOT sites. Established 1996.” identified by the target words pussy, cunt, ass, porn, and cum, and including explicit pornographic pictures located by auto-referral from http://www.curableromantic.com/

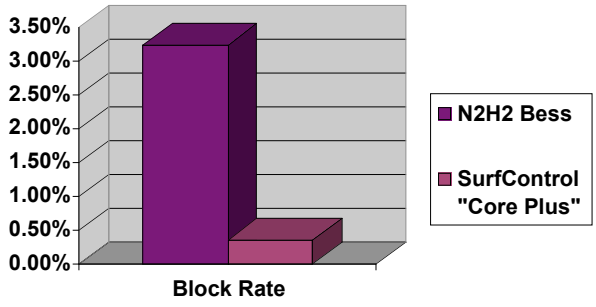
The primitive keyword detection scheme revealed many pornographic web pages that the blocking software products did not block.

However, the researchers did not even attempt to search for “visual depictions” of pornography and, as mentioned by the court declaring CIPA unconstitutional for libraries: “This is of critical importance, because CIPA, by its own terms, covers only ‘visual depictions.’ 20 U.S.C. §9134(f)(1)(A)(i); 47 U.S.C. §254(h)(5)(B)(i).”

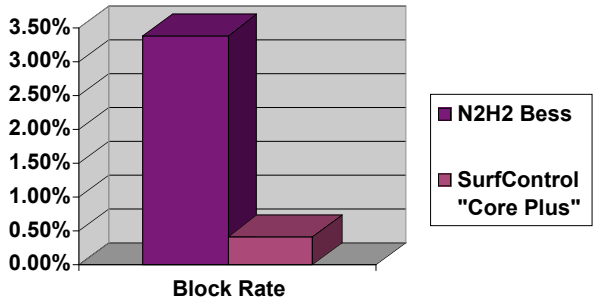
Overall Blocking Rates

At a minimum, Internet blocking software blocks tens of thousands of web pages inappropriately, but because schools administering Internet blocking software can configure the software to restrict access to fewer or greater numbers of web pages by choosing the blocking codes they wish to block, and because Internet blocking companies assign differing numbers of web pages to the block codes in their products, blocking rates can vary widely between various blocking software installations.

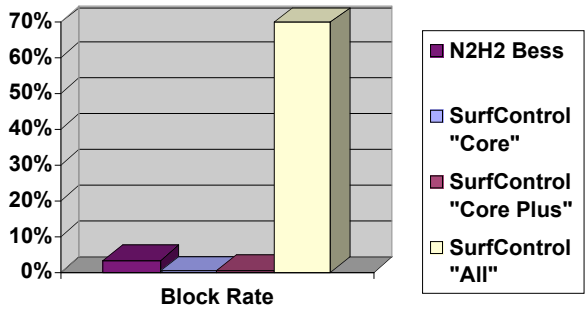
Focusing on the blocking software configurations the researchers speculate are most likely used in schools, the study found overall blocking rates between 0.36% and 3.24%.



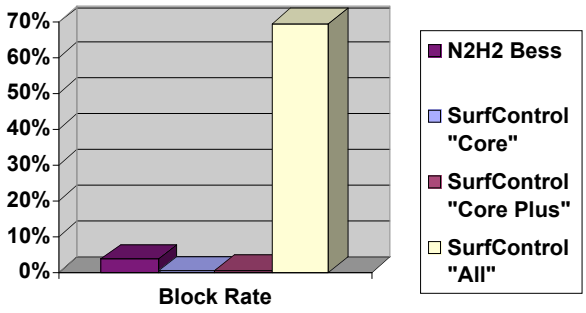
Focusing on the blocking software configurations the researchers speculate are most likely used in schools and removing all web pages that contained “k12” in the web address, the study found overall blocking rates between 0.41% and 3.37%.



The study found overall blocking rates between 0.22% and 71.14% of web pages generated from state-mandated curriculum topic searches, depending primarily on which blocking codes are applied by the blocking product, but also on blocking product and state. However, it is improbable that many schools operate with all blocking codes selected, the level necessary for blocking seventy percent or more of web pages – the researchers speculate that most schools are using blocking codes at least as restrictive as the “core plus” blocking codes for SurfControl.



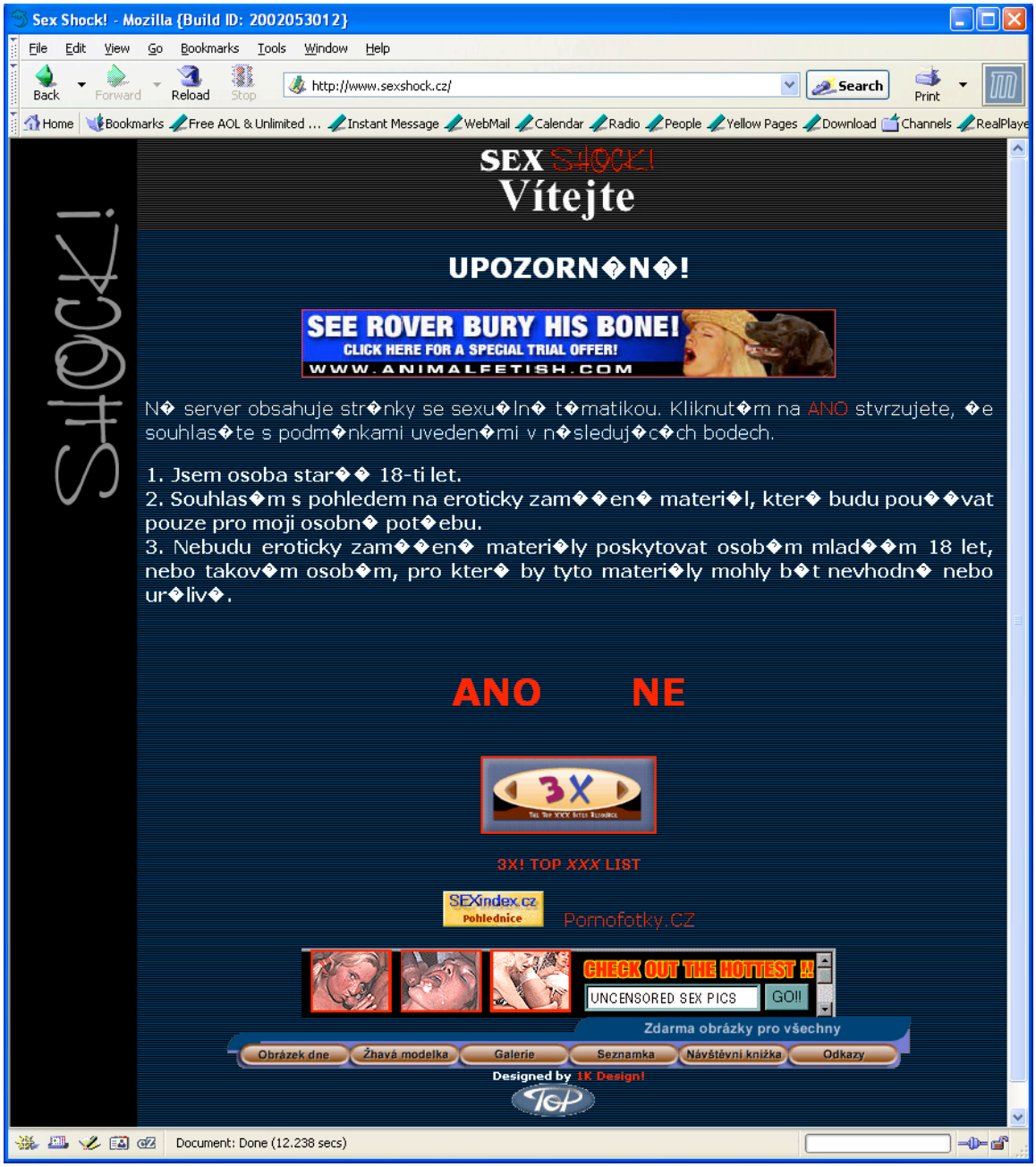
When removing all web pages that contained “k12” in the web address, the study found overall blocking rates between 0.31% and 69.49% of web pages generated from state-mandated curriculum topics, depending primarily on which blocking codes are applied by the blocking product, but also on blocking product and state.



N2H2 Bess Blocking

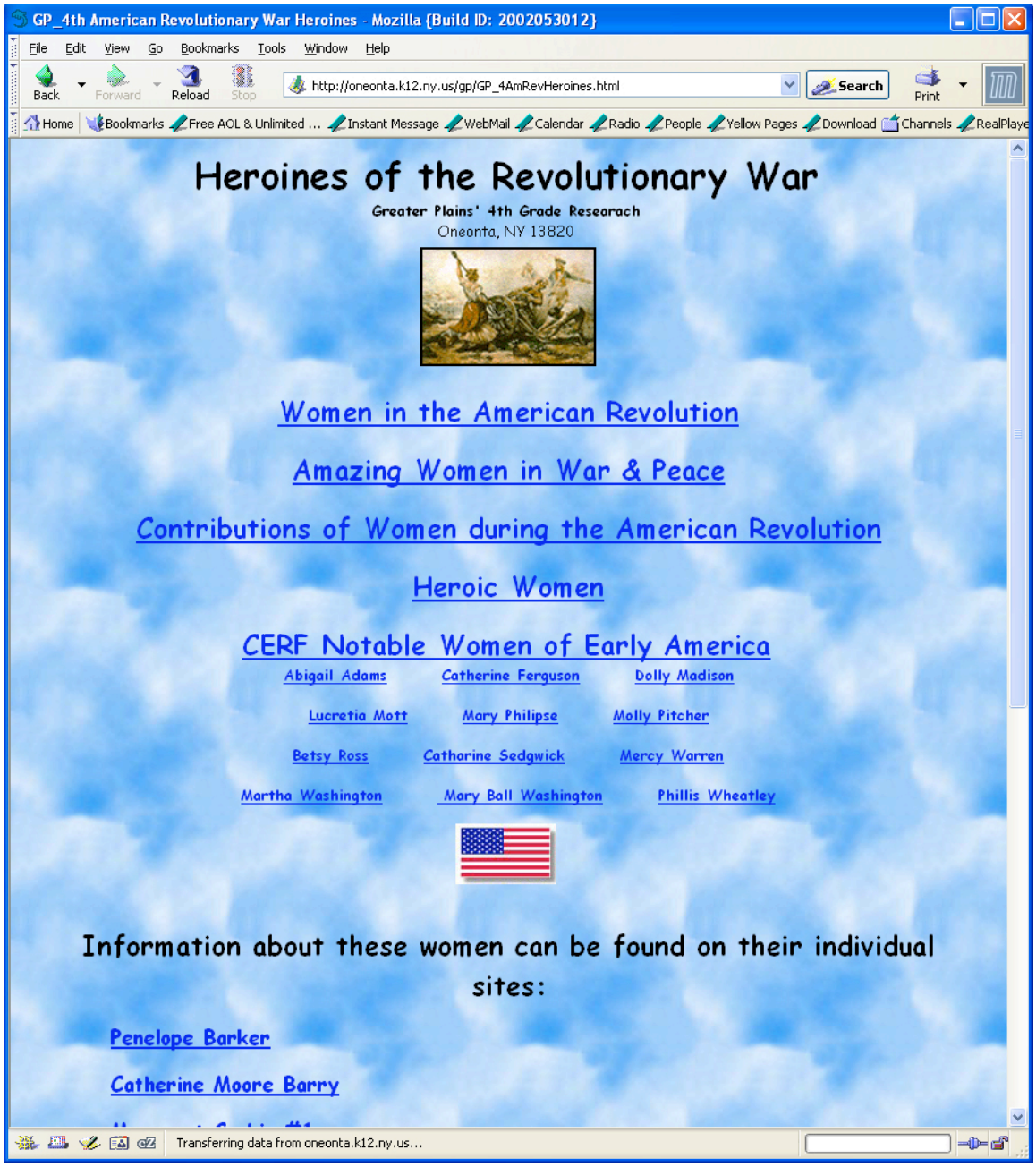
For N2H2’s Bess product, this study found an average blocking rate of 3.24% ±0.04% (95% confidence interval) of web pages generated from state-mandated curriculum topic searches (a total of 31,549 pages blocked of 973,215 pages checked).

As an example, N2H2 Bess correctly blocked as Pornography a Czech porn web page called Sex Shock at http://www.sexshock.cz/



Removing "k12" pages from the sample, this study found an average blocking rate of 3.66% ±0.04% (95% confidence interval) of web pages generated from state-mandated curriculum topic searches (a total of 31,480 pages blocked of 860,939 pages checked).

For example, N2H2 Bess blocked as Recreation/Entertainment the "Heroines of the Revolutionary War" web page at http://oneonta.k12.ny.us/gp/GP_4AmRevHeroines.html "created by Mrs. Rees, Librarian, for use by 4th grade students as they work on their American Revolutionary projects in the Library Media Center Computer Lab at Greater Plains…neighborhood school located in the West End of the City of Oneonta," NY.


GP_4th American Revolutionary War Heroines - Mozilla {Build ID: 2002053012}
File Edit View Go Bookmarks Tools Window Help
Back Forward Reload Stop
http://oneonta.k12.ny.us/gp/GP_4AmRevHeroines.html
Search
Print
Home Bookmarks Free AOL & Unlimited ... Instant Message WebMail Calendar Radio People Yellow Pages Download Channels RealPlaye
Heroines of the Revolutionary War
Greater Plains' 4th Grade Research
Oneonta, NY 13820
Women in the American Revolution
Amazing Women in War & Peace
Contributions of Women during the American Revolution
Heroic Women
CERF Notable Women of Early America
Abigail Adams
Catherine Ferguson
Dolly Madison
Lucretia Mott
Mary Philipse
Molly Pitcher
Betsy Ross
Catharine Sedgwick
Mercy Warren
Martha Washington
Mary Ball Washington
Phillis Wheatley
Information about these women can be found on their individual sites:
Penelope Barker
Catherine Moore Barry
Transferring data from oneonta.k12.ny.us...

N2H2 Bess also blocked as Recreation/Entertainment the same school's "Writing Techniques" web page describing literary terminology at http://oneonta.k12.ny.us/hs/murphy/terms.htm

Writing Techniques

allegory: A form of literature in which objects and persons represent ideas or qualities.

alliteration: The repetition of initial consonant sounds in words, as "stormy seas."

allusion: An indirect reference to an historical or literary figure or event or place.

antagonist: A character who opposes the protagonist.

antithesis: A strong contrast between two ideas, as in "cold hands, warm heart."

apostrophe: A speaker of character speaks to an inanimate object, as in "Twinkle, twinkle little star, how I wonder what you are?"

blank verse: Poetry consisting of unryhmed lines of iambic pentameter.

cause and effect: An organizational pattern in which a writer first presents a reason or motive or basis and then presents its result or consequence.

character: A figure who takes part in the action of a literary work. Characters may be *static* (unchanging) or *dynamic* (changing); *stereotype* or *unique*.

chronology: An organizational pattern in which ideas are presented in their time sequence.

climax pattern: An organization of ideas from least important to most important.

comparison: A way of developing ideas in writing by showing similarities between or among things.

connotation: The shade or tone of a word's meaning that the word suggests. A word such as *brawny* has a positive or favorable connotation; *fat,* however, has an unfavorable or negative connotation.

contrast: A way of developing ideas in writing by showing differences between or among things.

couplet: Two consecutive lines of rhymed poetry.

denotation: The *dictionary* meaning of a word. (contrast to connotation)

euphemism: A mild or less offensive word or expression that is substituted for one considered to be offensive or unpleasant. *Pass away* is a euphemism for *die*.

figurative language: Language based on or using figures of speech; not literal but metaphorical.

figure of speech: An expression in which words are used to create a forceful image. ex: personification, metaphor, simile, etc.

flashback: A scene which takes the reader to an earlier part of the story.

foreshadowing: Hints about events to come in a work of literature.

free verse: Poetry that has no fixed or regular pattern of rhythm or rhyme.

SurfControl Blocking

A SurfControl representative reported that, although the company makes no official recommendation about which blocking codes a school should select, they have noticed that most schools make use of a core set of blocking codes with many of those schools adding a small set of additional blocking codes.

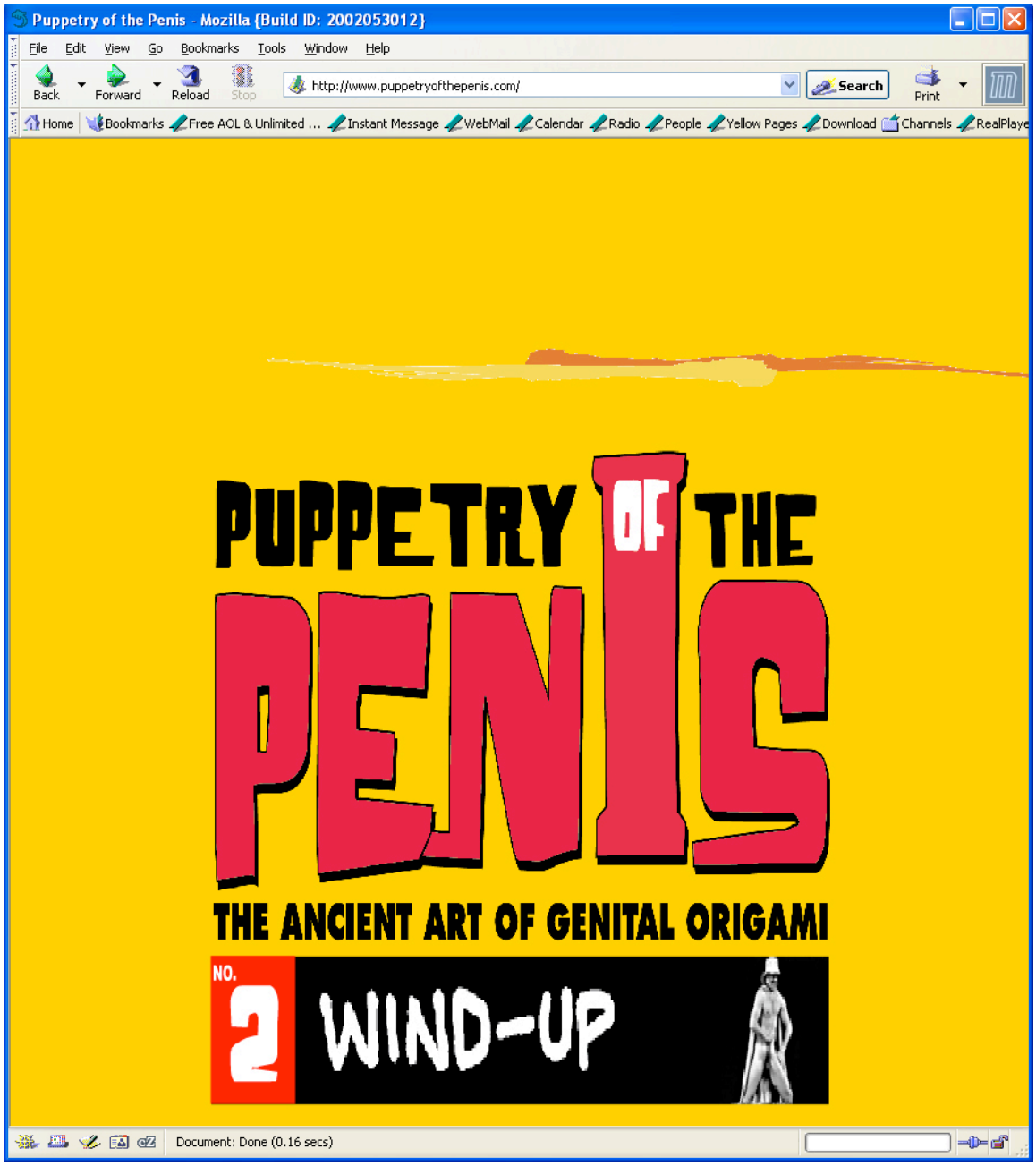
This study found an average blocking rate of 0.28% ±0.01% (95% confidence interval) of web pages generated from state-mandated curriculum topic searches for SurfControl "core" blocking codes described by the SurfControl representative as "the Education market's most important concerns" (a total of 2,682 pages blocked of 973,215 pages checked). SurfControl's ten "core" blocking codes are: Adult/Sexually Explicit, Chat, Criminal Skills, Drugs, Alcohol & Tobacco, Gambling, Hacking, Hate Speech, Violence, Weapons, and Web-based Email. Many of the codes represent content that is not proscribed by CIPA.

This study found an average blocking rate of 0.36% ±0.01% (95% confidence interval) of web pages generated from state-mandated curriculum topic searches for SurfControl core blocking codes plus a small set of commonly used additional blocking codes, i.e. "core plus" (a total of 3,522 pages blocked of 973,215 pages checked). SurfControl "core plus" blocking codes are the "core" blocking codes plus three more blocking codes: Glamour & Intimate Apparel, Personals & Dating, and Sex Education.

It is unlikely that many schools operate the SurfControl software with all blocking codes selected, which is what is required to achieve blocking rates in the 70% range, since some of the blocking codes may be used to include, rather than exclude sites. This study found an average blocking rate of 69.79% ±0.09% (95% confidence interval) of web pages generated from state-mandated curriculum topic searches for SurfControl core blocking codes (a total of 679,216 pages blocked of 973,215 checked).

The researchers speculate that most schools are using blocking codes at least as restrictive as the "core plus" blocking codes for SurfControl.

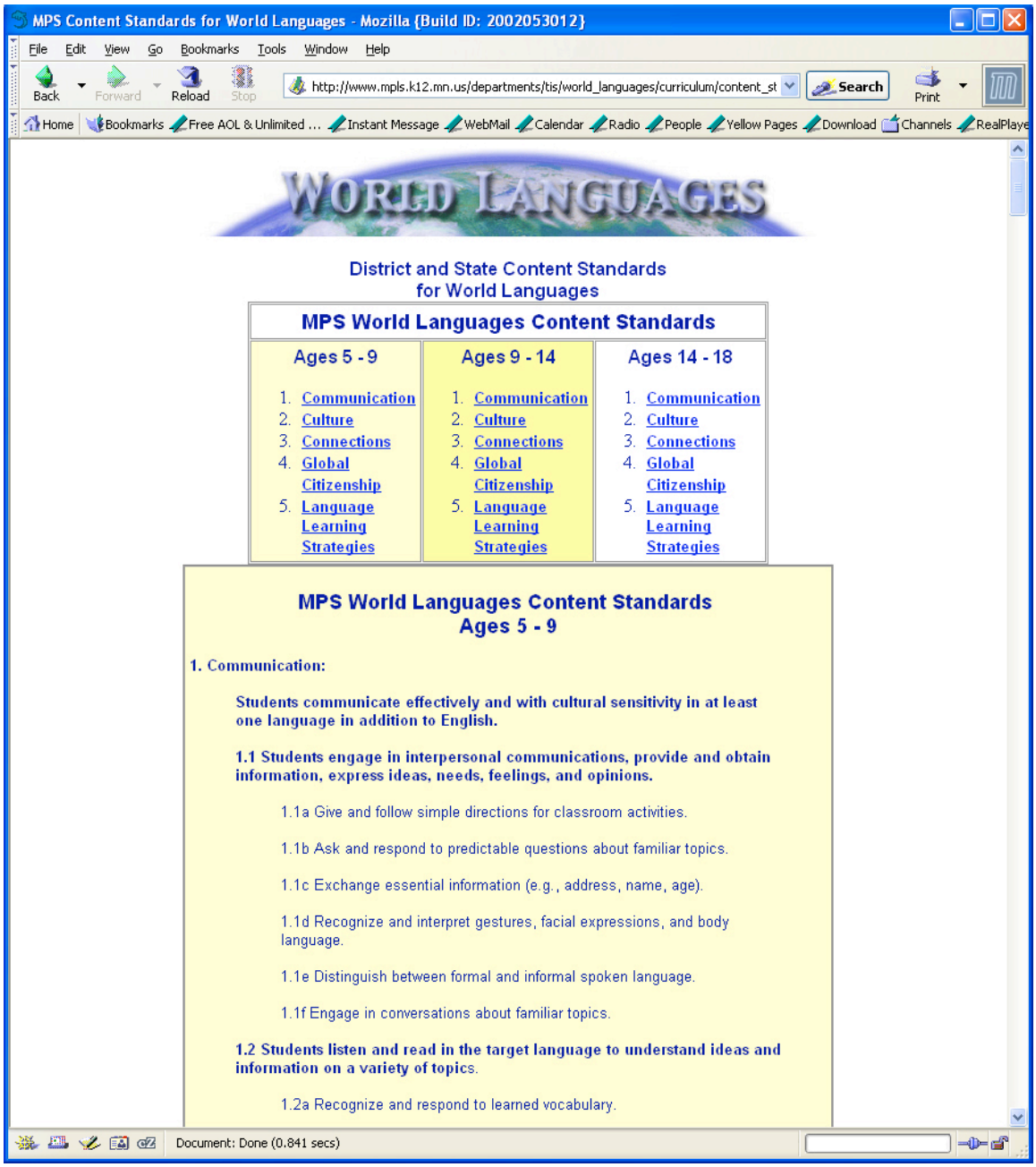
As an example of a web page blocked correctly, SurfControl blocked as Adult/Sexually Explicit the “Puppetry of the Penis” web page which shows a man “winding up” his penis at http://www.puppetryofthepenis.com/



Removing “k12” pages from the sample, this study found an average blocking rate of 0.31% ±0.01% (95% confidence interval) of web pages generated from state-mandated curriculum topic searches for SurfControl “core” blocking codes (a total of 2,682 pages blocked of 860,939 pages checked), an average blocking rate of 0.41% ±0.01% (95% confidence interval) of web pages generated from state-mandated curriculum topic searches for SurfControl “core plus” blocking codes (a total of 3,522 pages blocked of

860,939 pages checked), and an average blocking rate of 69.49% ±0.10% (95% confidence interval) of web pages generated from state-mandated curriculum topic searches for SurfControl core blocking codes (a total of 598,229 pages blocked of 860,939 checked).

As an example of a “k12” page blocked, SurfControl blocked as News the Minneapolis, Minnesota, “District and State Content Standards for World Languages” web page at http://www.mpls.k12.mn.us/departments/tis/world_languages/curriculum/content_standards.html



The absolute number of pages blocked by SurfControl “core” and “core plus” configurations was identical whether or not removing “k12” pages from the sample. The

researchers speculate that the reason for this is that SurfControl assigns all "k12" pages the Education code.

Blocking by Category/Topic

This study demonstrates that Internet blocking software blocks web pages generated from some topic and category searches of the state-mandated curriculums much more than others.

Blocking by Topic

This section details how N2H2 Bess and SurfControl blocked web pages generated from topic searches of the state-mandated curriculum.

N2H2 Bess Blocking by Topic

Topics N2H2 Bess blocked 40% or more of the time included the following:

1) Examine the effect of political programs and activities of Populists (100%)

2) Odler [sic] adulthood (100%)

3) National Labor Relations Board v. Jones & Laughlin Steel Company, Brown… (66.67%)

4) Dating (60%)

5) Firearms (50%)

6) Listen actively and critically by/delving deeper into the topic (48%)

7) Pogo-stick (46%)

8) Increase sight vocabulary, reading vocabulary, and writing vocabulary through… (44%)

9) Comedy (42%)

10) Keep hands clean, using appropriate cleaning techniques (42%) [Note: this topic apparently blocked a lot by both products perhaps because of the web pages with the Alanis Morissette song "Hands Clean."]

11) Short problems, emphasizing element force/energy (e.g., swing, melt, explode,… (41.3%)

12) Arms (40%)

13) Pantoming (40%) [Note: represents a copying error which is amazingly found on many web pages; should have been "Pantomiming"]

14) Demonstrate through role-playing appropriate use of formal and informal language… (40%)

SurfControl Blocking by Topic

Topics SurfControl blocked 40% or more of the time in the "core plus" configuration included the following:

1) Examine the effect of political programs and activities of Populists (100%)

2) Dating (66%)

3) History, rules and strategy of sports (43%)

4) Firearms (42%)

SurfControl blocked 100% of 102 topics in the "all codes" configuration.

Blocking by Topic Comments

N2H2 Bess blocked 100% of the web pages related to two curriculum topics and SurfControl blocked 100% of the web pages related to one of the two curriculum topics blocked entirely by N2H2 Bess.

The topic most blocked by both products was "Examine the effect of political programs and activities of Populists." Both products blocked all five web pages associated with that curriculum topic. Examination of the five web pages showed that there were five occurrences of the same web page on National Socialists which researchers agreed was blocked according to guidelines advertised by the blocking companies as "Hate/Discrimination" by N2H2 Bess and as "Hate Speech" by SurfControl.

N2H2 Bess also blocked all five occurrences of the oddly misspelled topic "odler adulthood" 100% of the time. Examination of the five web pages showed that there were five occurrences of the same web page on "Raising a Teenager" which researchers marked inappropriately blocked as "Free Pages" by N2H2 for two reasons: 1) customers have to pay to create a website on AOL, so N2H2 did not assign this web page correctly according to their published block code definitions, and 2) the content on this web page, which is a brief book review, does not merit blocking in schools.

The topics "Dating" and "Firearms" were both extensively blocked by N2H2 and SurfControl.

For example, N2H2 blocked 30 of 50 sites on "dating" with the following block codes: Adults Only, Nudity, Jokes, Personal Information, Personals, Pornography, and Sex. SurfControl blocked 33 of 50 sites on "dating" with the following block codes: Adult/Sexually Explicit, Glamour & Intimate Apparel, and Personals & Dating. Examination of a sample of 63 of the "dating" web pages blocked showed that the Internet blocking companies assigned the wrong block codes 23.81% ±10.73 (95% confidence interval) of the time (for 15 out of 63 pages) but only blocked the pages wrongly 6.35% ±6.14% (95% confidence interval) of the time (or 4 out of 63 pages) because they could have blocked many of the pages with the wrong block codes using another one of their block codes had they assigned those pages the correct block code.

Blocking by Category

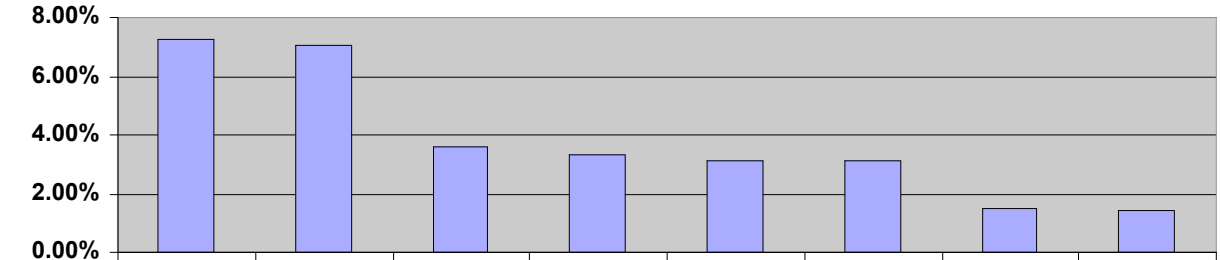
The Internet blocking software products tended to block more web pages associated with the curriculum categories of Physical Education, Health, Foreign Language, Latin, and History – Social Science. They tended to block fewer web pages associated with the Math(ematics) curriculum category.

The blocking software products may have prevented access to some foreign language sites because the blocking company employees could not determine what the material was rather than because of the presence of anything which the law would find objectionable.

N2H2 Bess Blocking by Category

N2H2 Bess tended to block some categories of web pages significantly more than others.

For the California curriculum, N2H2 Bess blocked the following top-level categories at these block rates:



	Foreign Language	Physical Education	History-Social	Health	Visual & Performing	English-Language	Science	Mathematics
Block Rate	7.28%	7.04%	3.58%	3.35%	3.10%	3.10%	1.52%	1.43%

N2H2 blocked the following second-level categories from the California curriculum at rates of 5% or more:

1) Physical Education: How I Move in My Environment (10.00%)

2) Physical Education: My Partner and I - How We Move in Space (9.38%)

3) Physical Education: Moving Through Space and Time (8.14%)

4) Physical Education: Working Cooperatively to Achieve a Common Goal (8.10%)

5) Foreign Language: Language Learning (7.29%)

6) Physical Education: Meeting Challenges and Making Decisions (7.23%)

7) Physical Education: Developing a Personalized Fitness Program for a Healthy Lifestyle (7.12%)

8) Physical Education: Manipulating Objects with Accuracy and Speed (7.03%)

9) Physical Education: Continuity and Change in Movement (6.49%)

10) Physical Education: Manipulating Objects in and Through Space (6.24%)

11) Physical Education: Working as a Team to Solve Problems (5.63%)

12) History-Social Science: World History and Geography Ancient Civilizations (5.18%)

N2H2 blocked the following selected third-level categories from the California curriculum at high rates:

1) Speaking Applications (Genres and Their Characteristics)/descriptive presentations/speaker's point of view (14.00%)

2) Writing Applications (Genres and Their Characteristics)/biographical or autobiographical narratives or short stories/scenes and incidents (12.00%)

3) Federal civil rights and voting rights/women's right movement (12.00%)

4) identity cos 2 (x) + sin 2 (x) = 1 (12.00%)

5) U.S. Constitution and other essential documents/character of American democracy (12.00%)

6) factor small whole numbers/numbers 2 3 5 7 11 do not factors except 1 themselves numbers are called prime numbers. (10.00%)

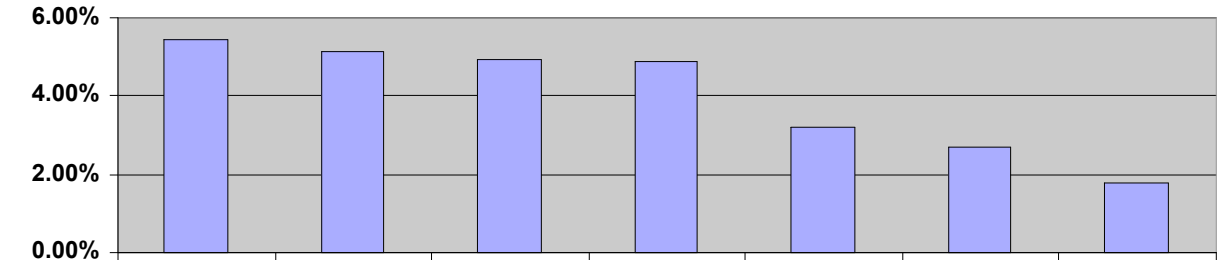
7) political, social, economic, technological and cultural developments of the 1920s/18th Amendment and Volstead Act(prohibition) (10.00%)

8) tables graphs rules solve problems involving rates proportions/convert one unit measurement another (feet miles centime-ters inches). (10.00%)

9) Self Image and Personal Development (9.44%)

10) Reconstruction (8.78%)

For the Massachusetts curriculum, N2H2 Bess blocked the following top-level categories at these block rates:



	Arts	English	History and Social Science	Foreign Language	Health	Science and Technology	Math
Block Rate	5.46%	5.12%	4.93%	4.87%	3.20%	2.71%	1.77%

N2H2 blocked the following second-level categories from the Massachusetts curriculum at rates of 5% or more:

1) Theatre (6.89%)

2) History and Social Science: Core Knowledge (6.33%)

3) Foreign Language: Comparisons (6.32%)

4) Music (6.12%)

5) Reading and Literature (6.07%)

6) History (5.63%)

7) Foreign Language: Communication (5.32%)

8) Dance (5.06%)

N2H2 blocked the following selected third-level categories from the Massachusetts curriculum at high rates:

1) interviewing one person about his or her occupation or interests; (24.00%)

2) conversing with speakers of the target language; (14.00%)

3) Mapping the Earth (13.00%) [Note: this topic blocked at a high rate by both blocking products because the word “models” appeared in the detailed topic listing.]

4) Tell time at quarter-hour intervals on analog and digital clocks using a.m. and p.m. (12.00%)

5) Know addition facts (addends to ten) and related subtraction facts, and use them to solve problems (10.00%)

6) Identify parts of the day (e.g., morning, afternoon, evening), days of the week, and months of the year. Identify dates using a calendar. (10.00%)

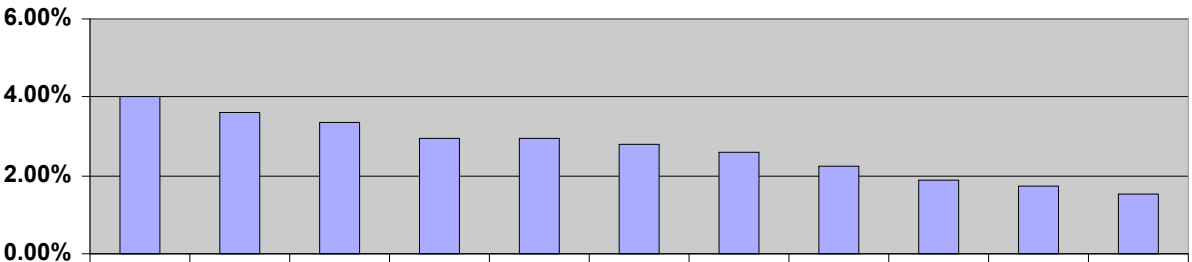
7) Classification of Organisms (9.00%)

8) Dramatic Literature (8.88%)

9) Interdisciplinary Learning Religion, Ethics, Philosophy and Literature in History (8.30%)

10) Identify the value of all U.S. coins, and $1, $5, $10, and $20 bills. Find the value of a collection of coins and dollar bills and different ways to represent an amount of money up to $5. Use appropriate notation, e.g., 69¢, $1.35. (8.00%)

For the North Carolina curriculum, N2H2 Bess blocked the following top-level categories at these block rates:



	Arts Educatio	Languag e Arts	Latin	Science	Healthful Living	Second Languag	Social Studies	Guidance	Mathemat ics	Computer	Informati on Skills
Block Rate	4.02%	3.61%	3.37%	2.97%	2.96%	2.78%	2.61%	2.23%	1.87%	1.71%	1.51%

N2H2 blocked the following second-level categories from the North Carolina curriculum at rates of 5% or more:

1) Build an understanding of the actions of objects (10.40%)

2) Build an understanding of the concepts of sound (6.40%)

3) US History (5.46%)

4) Build an understanding of plant and animal life cycles (5.33%)

5) Build an understanding of solid earth materials (5.20%)

6) Theatre (5.18%)

7) Read and Write (5.00%)

8) Build an understanding of electricity and magnetism (5.00%)

N2H2 blocked the following selected third-level categories from the North Carolina curriculum at high rates:

9) Listen actively and critically by/delving deeper into the topic. (48.00%)

10) Keep hands clean, using appropriate cleaning techniques (42.00%)

11) Learn how to make and keep friends. (24.00%)

12) Make informed judgments about/propaganda. (20.00%)

13) Describe meanings of traffic signs and signals (14.00%)

14) Analyze the parts of a light bulb (14.00%)

15) Recognize and seek help for depression (12.00%)

16) Use capital letters to write I and own name (12.00%)

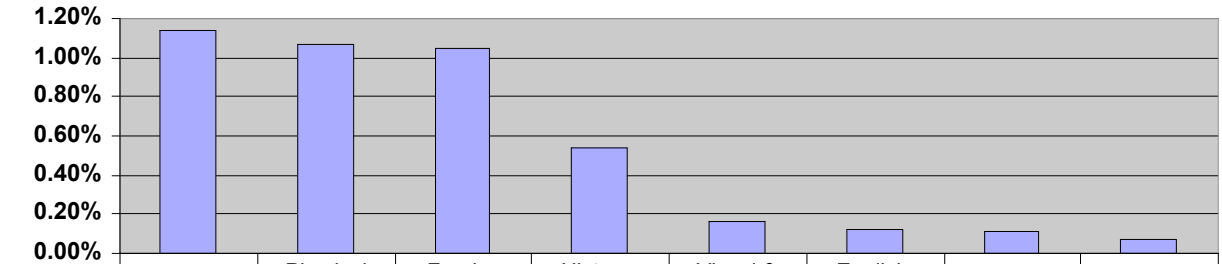
17) Evaluate a variety of public documents by/comparing the argument and counter-argument presented. (12.00%)

18) Recognize two appropriate sites on the body to monitor the heart rate (12.00%)

SurfControl Blocking by Category

SurfControl "core plus" configuration tended to block some categories of web pages significantly more than others.

For the California curriculum, SurfControl "core plus" configuration blocked the following top-level categories at these block rates:



	Health	Physical Education	Foreign Language	History-Social	Visual & Performing	English-Language	Mathematics	Science
Block Rate	1.14%	1.07%	1.05%	0.54%	0.16%	0.12%	0.11%	0.07%

SurfControl “core plus” configuration blocked the following second-level categories from the California curriculum at rates of 1% or more:

1) Health: Informed use of health-related information, products, and services/knowing (2.00%)

2) Health: An understanding of the process of growth and development (1.93%)

3) Physical Education: Developing a Personalized Fitness Program for a Healthy Lifestyle (1.82%)

4) Physical Education: How I Move in My Environment (1.61%)

5) Physical Education: Working as a Team to Solve Problems (1.50%)

6) Health: Acceptance of Personal Responsibility for Lifelong Health (1.36%)

7) Physical Education: Continuity and Change in Movement (1.30%)

8) Health: Respect for and promotion of the health of others (1.26%)

9) Physical Education: Moving Through Space and Time (1.24%)

10) Foreign Language: Language Learning (1.11%)

11) Physical Education: Manipulating Objects with Accuracy and Speed (1.03%)

SurfControl “core plus” configuration blocked the following selected third-level categories from the California curriculum at high rates:

1) identity cos 2 (x) + sin 2 (x) = 1 (6.00%)

2) Writing Applications (Genres and Their Characteristics)/job applications and resumés/conventional style (6.00%)

3) Reconstruction (5.74%)

4) Students will understand their developing sexuality, will choose to abstain from sexual activity, and will treat the sexuality of others with respect. (5.51%)

5) model solve problems representing adding subtracting amounts money/solve problems combinations coins bills. (4.00%)

6) political, social, economic, technological and cultural developments of the 1920s/18th Amendment and Volstead Act(prohibition) (4.00%)

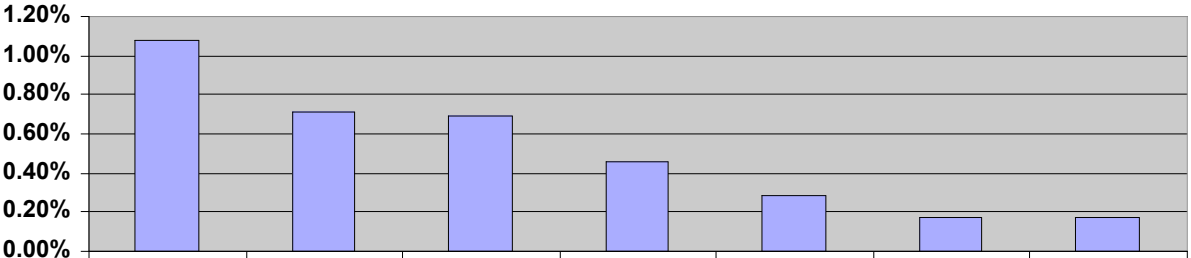
7) unique roles and responsibilities of three branches of government/identify current representatives in legislative branch (4.00%)

8) origins, characteristics, and development of different political systems across time/forms of illegitimate power that 20th century African, Asian, and Latin American dictators used to gain and hold office (4.00%)

9) major social problems and domestic policy issues/significant policy speeches of Truman through Clinton (4.00%)

10) Federal civil rights and voting rights/diffusion of civil rights movement from rural Southern churches to urban North (4.00%)

For the Massachusetts curriculum, SurfControl "core plus" configuration blocked the following top-level categories at these block rates:



	Health	Foreign Language	History and Social Science	Arts	English	Science and Technology	Math
Block Rate	1.08%	0.71%	0.69%	0.46%	0.28%	0.17%	0.17%

SurfControl "core plus" configuration blocked the following second-level categories from the Massachusetts curriculum at rates of 1% or more:

1) Health: Social and Emotional Health (1.66%)

2) Health: Physical Health (1.19%)

3) Foreign Language: Communication (1.15%)

SurfControl "core plus" configuration blocked the following selected third-level categories from the Massachusetts curriculum at high rates:

1) Mapping the Earth (8.00%) [Note: this topic blocked at a high rate by both blocking products because the word "models" appeared in the detailed topic listing.]

2) Identify odd and even numbers and determine whether a set of objects has an odd or even number of elements. (8.00%)

3) Represent the possible outcomes for a simple probability situation, e.g., the probability of drawing a red marble from a bag containing three red marbles and four green marbles. (6.00%)

4) Relate geometric ideas to numbers, e.g., seeing rows in an array as a model of repeated addition (4.00%)

5) interviewing one person about his or her occupation or interests; (4.00%)

6) Select and use appropriate operations (addition, subtraction, multiplication, and division) to solve problems, including those involving money) (4.00%)

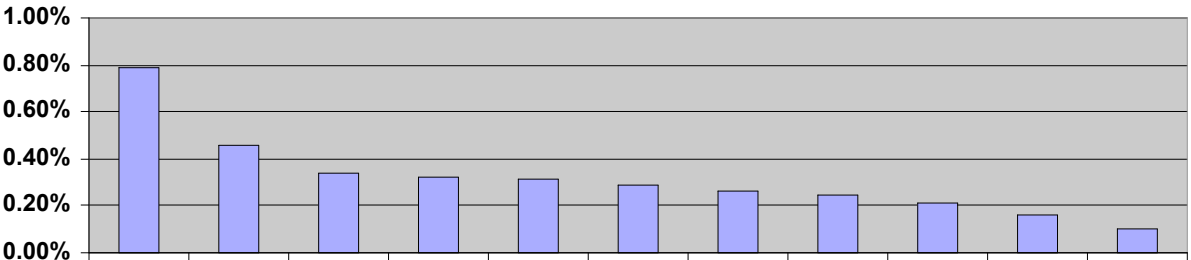
7) Reproduction (3.90%)

8) Interpersonal Relationships (3.61%)

9) Tobacco, Alcohol, and Other Substance Use (2.25%)

10) Interpersonal Communication (2.00%)

For the North Carolina curriculum, SurfControl "core plus" configuration blocked the following top-level categories at these block rates:



	Healthful Living	Latin	Science	Guidance	Social Studies	Language Arts	Information Skills	Arts Educatio	Computer	Second Languag	Mathematics
Block Rate	0.79%	0.46%	0.34%	0.32%	0.31%	0.29%	0.26%	0.25%	0.21%	0.16%	0.10%

SurfControl "core plus" configuration blocked the following second-level categories from the North Carolina curriculum at rates of 1% or more:

1) Healthful Living: Choose not to participate in substance use (1.96%)

2) Science: Build an understanding of the actions of objects (1.80%)

3) Science: Build an understanding of solid earth materials (1.47%)

4) Healthful Living: Interpret health risks for self and others and corresponding protection measures (1.28%)

5) Science: Build an understanding of the Solar System (1.09%)

6) Science: Build an understanding of technological design (1.00%)

SurfControl "core plus" configuration blocked the following selected third-level categories from the North Carolina curriculum at high rates:

1) Demonstrate strategies in a variety of games and sports (38.00%)

2) Refine skills and strategies for remaining or becoming abstinent from sexual intercourse (12.00%)

3) Explain the effectiveness and failure rates (some studies indicate failure rates range from 2% to 30%) of condoms as a means of preventing sexually transmitted diseases (12.00%)

4) Demonstrate skills and strategies for remaining or becoming abstinent from sexual intercourse (12.00%)

5) Affirm choice not to use tobacco or look alike products (10.00%)

6) Explain reasons not to use tobacco products (8.00%)

7) Describe normal weight gain and body changes during puberty (8.00%)

8) Explain the risks of premarital sexual intercourse (8.00%)

9) Demonstrate how to get help in an emergency (6.00%)

10) Keep hands clean, using appropriate cleaning techniques (6.00%)

Blocking by State

This study addressed Internet blocking of web pages related to state-mandated curriculums in California, Massachusetts, and North Carolina.

The study results show that Massachusetts had the highest rate of overblocking, followed by California, then North Carolina, for both blocking products studied as described below.

The research demonstrated that blocking software blocked web pages related to the Massachusetts state-mandated curriculum more often than those of California or North Carolina regardless of blocking product or blocking codes selection. In most cases, the research also demonstrated that blocking software blocked web pages related to the California state-mandated curriculum more often than those of North Carolina.

One possible explanation for the differing blocking rates by state could be the sample size. The states that had the most topics had the lowest block rates. Another possibility is that the blocking software may have blocked some curriculum-related web pages more due to the values expressed in the topic choices made by the authors of the curriculum. Overall, Massachusetts is likely the most “liberal” and North Carolina the most “conservative” of the three state-mandated curriculums addressed by this study. See “Blocking by Category/Topic” for more analysis related to curriculum topics.

N2H2 Bess Blocking by State

This section describes N2H2 Bess blocking by state with a focus on N2H2 Bess overblocking.

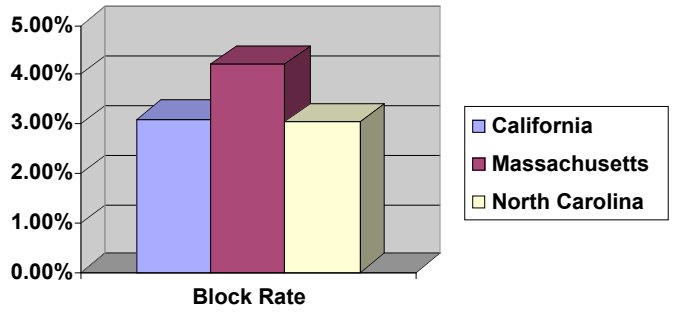
N2H2 Bess Overblocking by State

Researchers using the criterion of blocking only sites a court would reasonably find required by CIPA in according to average U.S. community standards tested 315 pages spread evenly over the entire sample of web pages blocked by N2H2 Bess and found that of the 294 pages that were accessible, N2H2 Bess blocked 98.98% ±0.30% (95% confidence interval) (291 web pages) inappropriately.

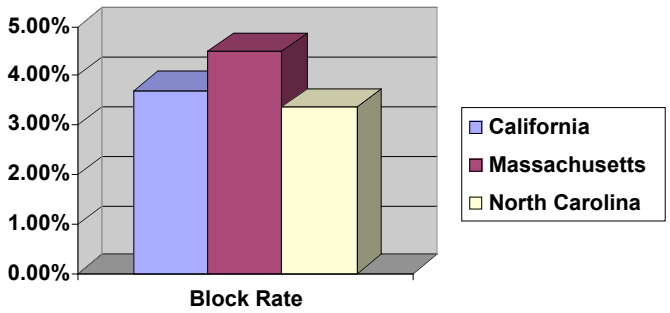
A breakdown by state shows that N2H2 Bess blocked inappropriately 98.90% ±2.18% (95% confidence interval) (90 web pages) of web pages related to the California curriculum, 100.00% ±0.00% (95% confidence interval) (61 web pages) of web pages related to the Massachusetts curriculum, and 98.59% ±1.97% (95% confidence interval) (140 web pages) of web pages related to the North Carolina curriculum.

N2H2 Bess Blocking by State

N2H2 Bess blocked 3.10% ±0.06% (95% confidence interval) of web pages related to the California state-mandated curriculum (a total of 10,161 pages blocked of 327,918 checked), 4.21% ±0.10% (95% confidence interval) of web pages related to the Massachusetts state-mandated curriculum (a total of 6,338 pages blocked of 150,648 checked), and 3.04% ±0.05% (95% confidence interval) of web pages related to the North Carolina state-mandated curriculum (a total of 15,050 pages blocked of 494,649 checked). Although the difference between California and North Carolina block rates is not statistically significant, there are statistically significant differences between Massachusetts block rates and the other two states' block rates (5% significance level, χ^2 test with 2 df).



When removing all pages containing "k12" in the web address from the sample, N2H2 Bess blocked 3.70% ±0.07% (95% confidence interval) of web pages related to the California state-mandated curriculum (a total of 10,158 pages blocked of 274,827 checked), 4.49% ±0.11% (95% confidence interval) of web pages related to the Massachusetts state-mandated curriculum (a total of 6,337 pages blocked of 141,278 checked), and 3.37% ±0.05% (95% confidence interval) of web pages related to the North Carolina state-mandated curriculum (a total of 14,985 pages blocked of 444,834 checked). Differences between N2H2 Bess non-"k12" block rates for all three states' are statistically significant (5% significance level, χ^2 test with 2 df).



SurfControl Blocking by State

This section describes SurfControl blocking by state with a focus on SurfControl overblocking.

SurfControl Overblocking by State

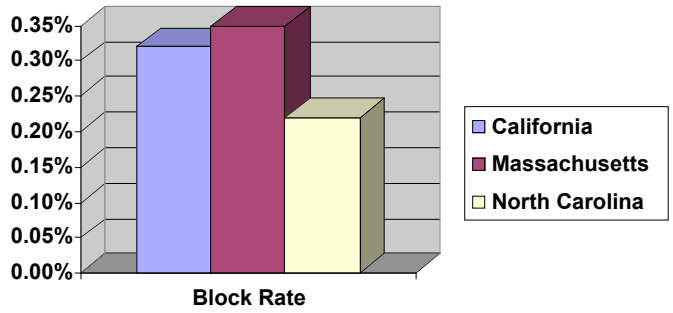
Researchers using the criterion of blocking only sites a court would reasonably find required by CIPA in according to average U.S. community standards tested 352 pages spread evenly over the entire sample of web pages blocked by SurfControl and found that of the 324 pages that were accessible, SurfControl blocked 97.22% ±0.52% (95% confidence interval) (315 web pages) inappropriately.

A breakdown by state shows that SurfControl blocked inappropriately 97.76% ±0.57% (95% confidence interval) (131 Web pages) of web pages related to the California curriculum, 100.00% ±0.00% (95% confidence interval) (65 Web pages) of web pages related to the Massachusetts curriculum, and 95.20% ±1.29% (95% confidence interval) (119 Web pages) of web pages related to the North Carolina curriculum.

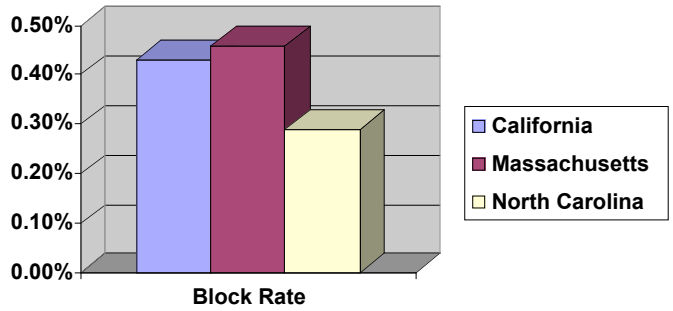
SurfControl Blocking by State

SurfControl "core" settings blocked 0.32% ±0.02% (95% confidence interval) of web pages related to the California state-mandated curriculum (a total of 1,053 pages blocked of 327,918 checked), 0.35% % ±0.03% (95% confidence interval) of web pages related to the Massachusetts state-mandated curriculum (a total of 521 pages blocked of 150,648 checked), and 0.22% % ±0.01% (95% confidence interval) of web pages related to the

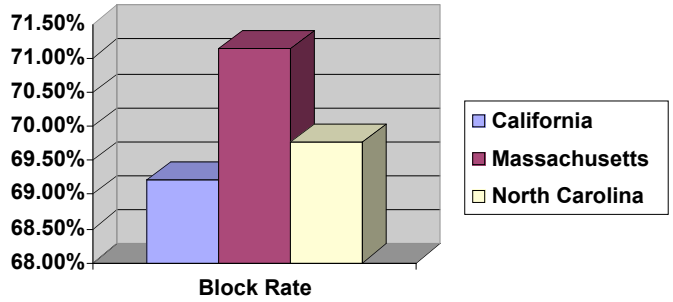
North Carolina state-mandated curriculum (a total of 1,108 pages blocked of 494,649 checked). Although the difference between SurfControl "core" California and Massachusetts block rates is not statistically significant, there are statistically significant differences between North Carolina block rates and the other two states' block rates (5% significance level, χ^2 test with 2 df).



SurfControl "core plus" settings blocked 0.43% ±0.02% (95% confidence interval) of web pages related to the California state-mandated curriculum (a total of 1,418 pages blocked of 327,918 checked), 0.46% ±0.03% (95% confidence interval) of web pages related to the Massachusetts state-mandated curriculum (a total of 694 pages blocked of 150,648 checked), and 0.29% ±0.01% (95% confidence interval) of web pages related to the North Carolina state-mandated curriculum (a total of 1,410 pages blocked of 494,649 checked). Although the difference between SurfControl "core plus" California and Massachusetts block rates is not statistically significant, there are statistically significant differences between North Carolina block rates and the other two states' block rates (5% significance level, χ^2 test with 2 df).



SurfControl "all" settings blocked 69.21% ±0.16% (95% confidence interval) of web pages related to the California state-mandated curriculum (a total of 226,960 pages blocked of 327,918 checked), 71.14% ±0.23% (95% confidence interval) of web pages related to the Massachusetts state-mandated curriculum (a total of 107,173 pages blocked of 150,648 checked), and 69.76% ±0.13% (95% confidence interval) of web pages related to the North Carolina state-mandated curriculum (a total of 345,083 pages blocked of 494,649 checked). Differences between SurfControl "all" block rates for all three states' are statistically significant (5% significance level, χ^2 test with 2 df).

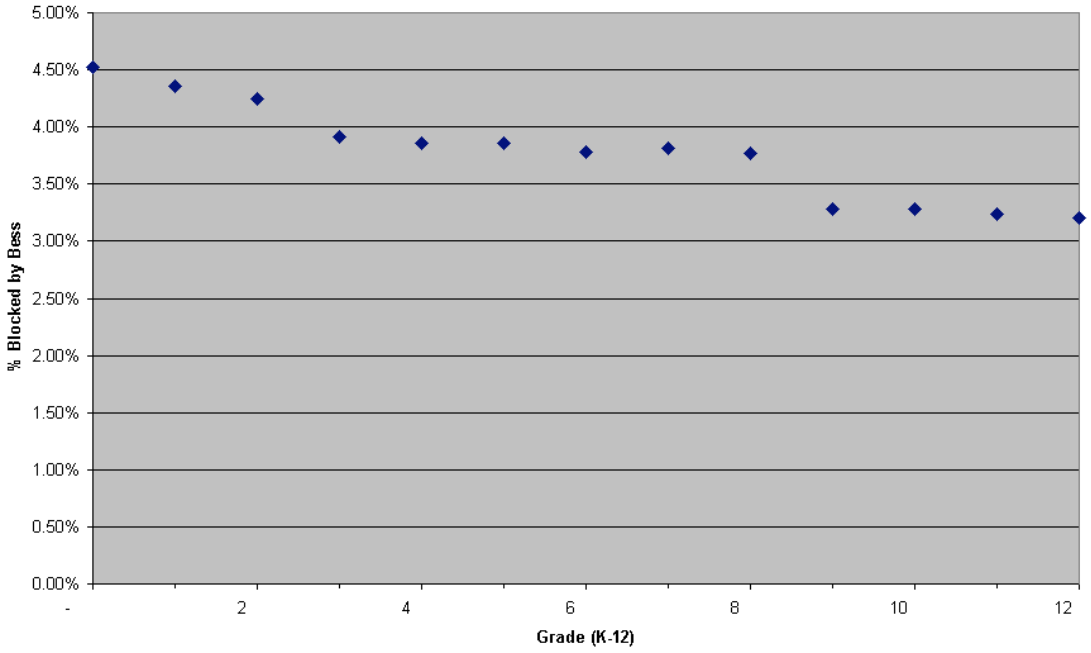


Blocking by Grade

Because the state-mandated curriculums generally had more topics listed in higher grade levels of the curriculum, more blocking of curriculum-related web pages occurs at the higher grade levels, particularly grades 9 to 12. However, the rates of blocking of curriculum-related web pages are fairly constant across all grade levels.

Note: Grade-specific blocking rates correspond to overall blocking rates reported above, but appear on average higher because many topics appeared in multiple grade levels.

N2H2 Bess blocking rates decreased gradually as grade level increased from 4.53% for grades prior to grade 1 to 3.21% for grade 12. With first and lower grades averaging at 4.44% and grades 2-12 averaging 3.52%, the researchers found a statistically significant relationship between grade level and blocking rate for the N2H2 Bess data at the 5% significance level. When regressing the blocked percentage vs. the grade level as a continuous factor, the researchers found that the grade level is a statistically significant explanatory factor for variation of blocking rates between the grades which explains 92% of the variation in blocking rate between grades. With an overall average of blocking rate of 3.60%, the N2H2 Bess blocking rate falls on average 0.107% per grade.



SurfControl "all" blocking rates remained fairly constant from 70% - 71% for all grades.

Blocking by Product

In studying the blocking performance by blocking product, researchers tallied the number of blocks that occurred in each blocking software block code. The study also examined how often blocking companies miscategorized web pages into incorrect block codes.

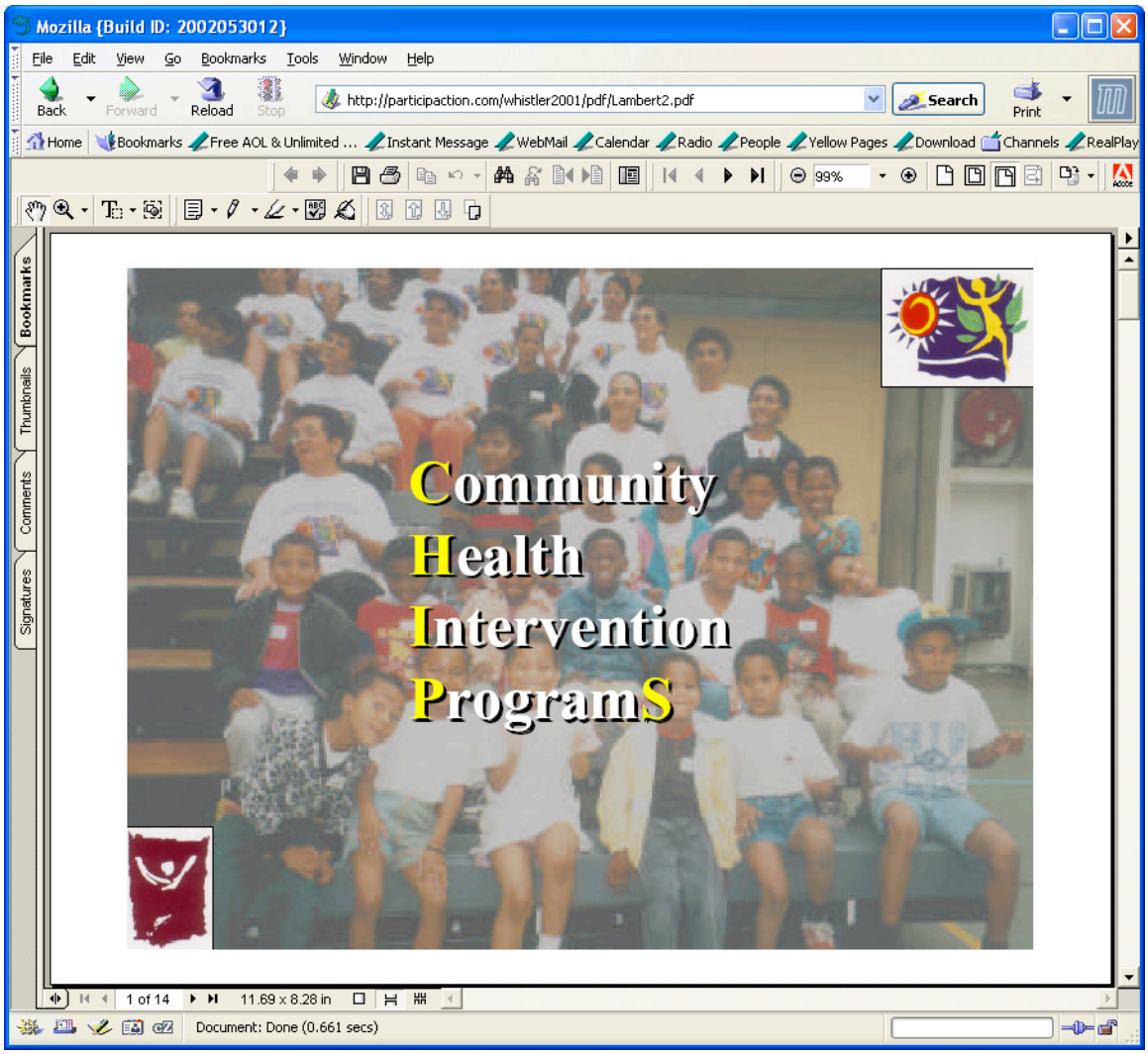
Because the two blocking products assign different blocking codes to the web pages they block, it is difficult to do a product-to-product comparison of the types of codes used. See the "Considerations" section for more information on correspondences between blocking codes of the Internet blocking products. Also, since the study set different numbers of blocking codes on each blocking product in various scenarios, comparisons of overall quantities of blocking are not particularly enlightening.

Note: Both products permit use of some of the block codes, such as "Education," to be used as "allow" or "exception" codes, explicitly allowing access to pages assigned the "allow" code, rather than restricting access to those pages. N2H2 clearly identifies which codes are block codes and which are "allow" codes, whereas a SurfControl spokesperson refused to indicate which codes are intended for which purpose, so researchers had to make some assumptions about likely uses of the "allow" codes.

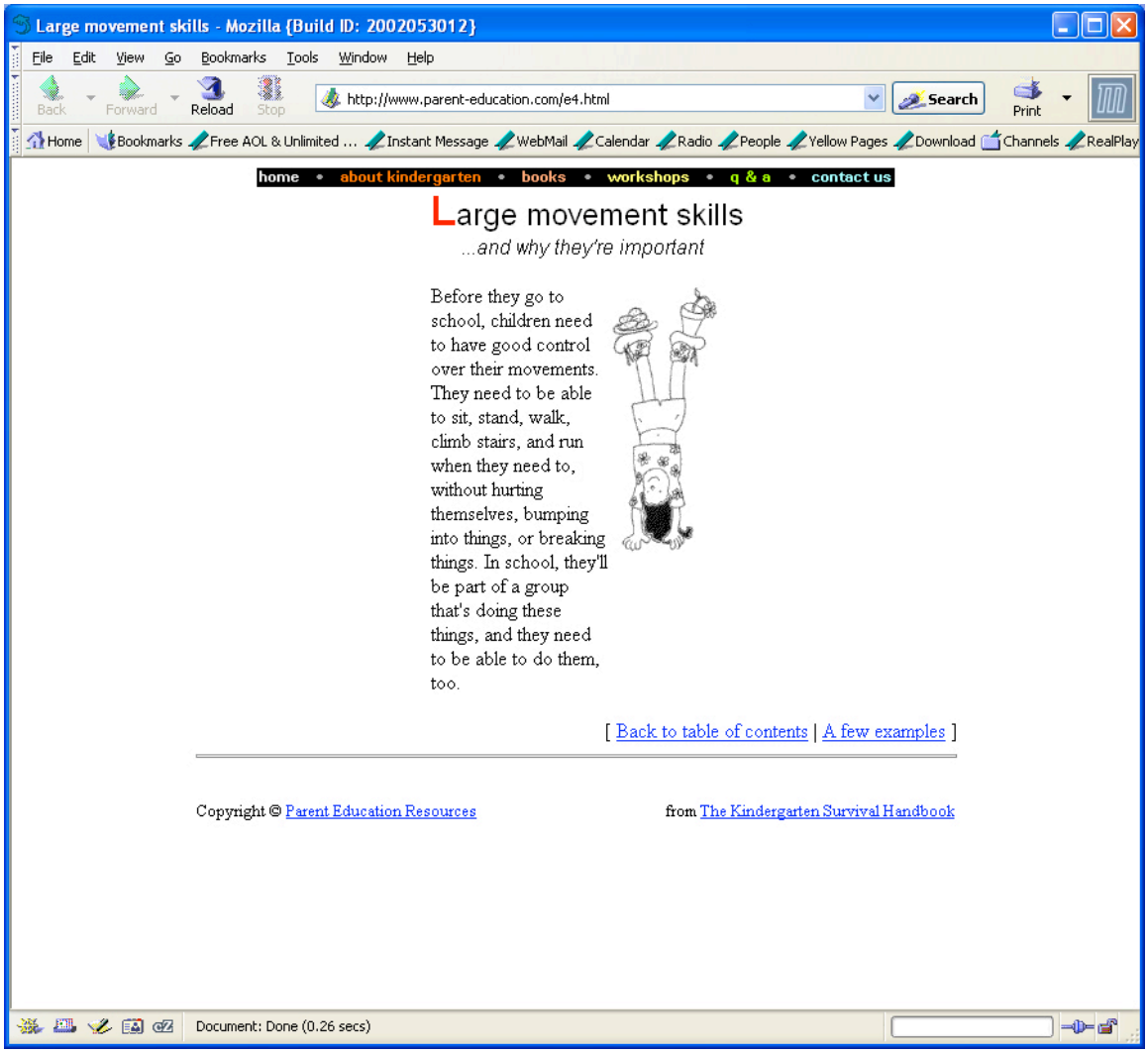
Determining whether the Internet blocking company assigned the correct block code for each web page meant reading the block code guidelines published by each Internet blocking company and making a determination whether or not each web page fit into the

block code(s) assigned by the company. In most cases, this was a simple task, but in some cases, there was a bit of subjectivity involved.

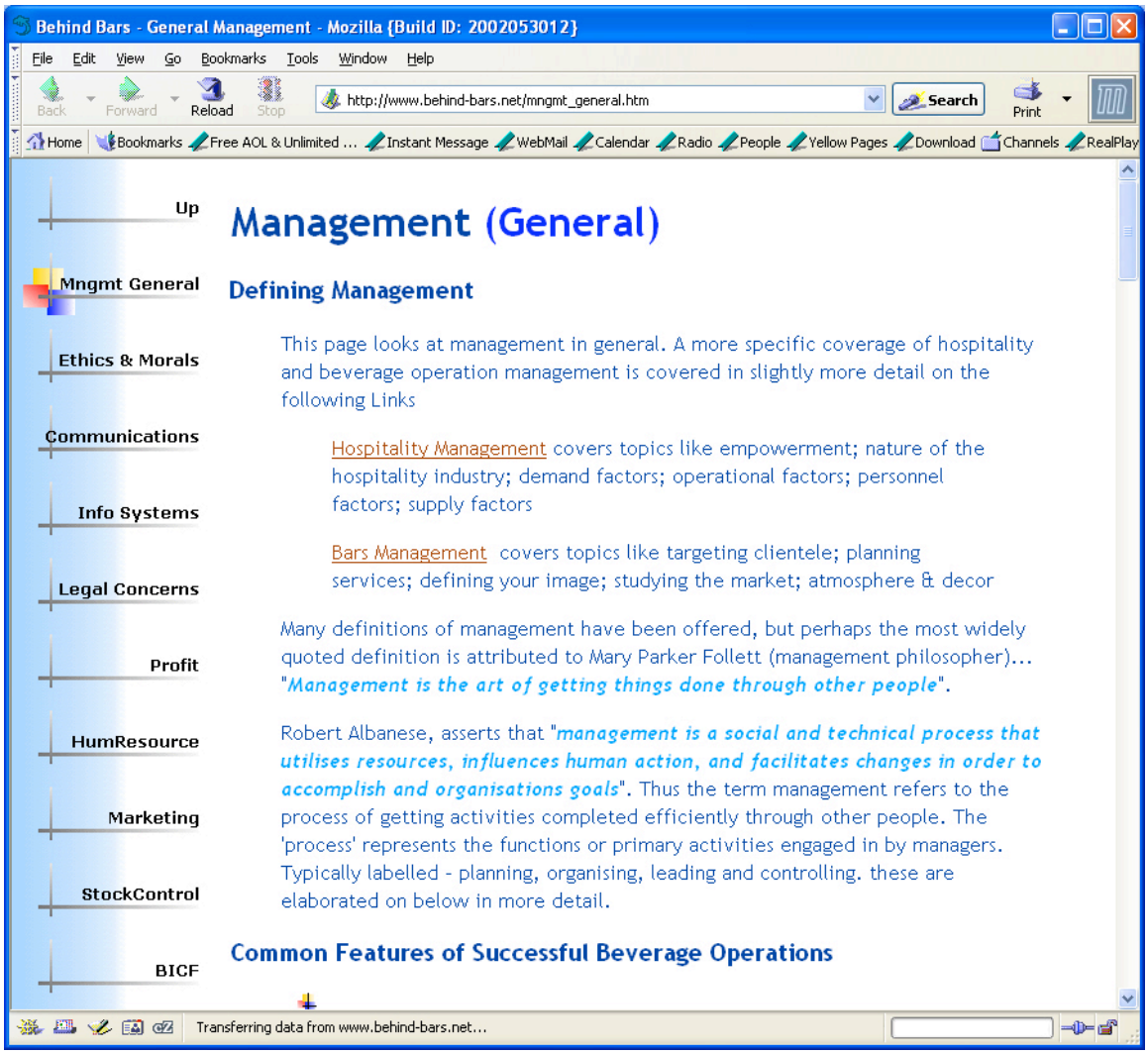
For example, N2H2 Bess assigned “CHIPS – Community Health Intervention Programs” from Dr. Vicki Lambert of Cape Town, South Africa, a Weapons block code, even though there was not a single mention of weapons on the web page.



In another example, N2H2 assigned a Pornography block code to a page about “Large movement skills and why they’re important” at http://www.parent-education.com/e4.html.



Sometimes, it's difficult to determine if the blocking company correctly assigned a block code. For example, SurfControl assigned a page on General Management of bars a Drugs, Alcohol, & Tobacco code, even though the page is about hospitality management, not about promoting drinking. In these cases, the researchers had to make a judgment call about whether or not the blocking company assigned the code appropriately.



In fact, the blocking companies used some block code definitions that the researchers found misleading at times. N2H2 defined its Pornography block code as:

> "Sites that contain material that are intended to be sexually arousing or erotic. This includes photos, animation, cartoons, and stories. This also includes child pornography."

The researchers found determining what is "intended to be sexually arousing or erotic" to be extremely subjective in borderline cases. Notice that "stories" do not fit within the visual depictions aspect of the web pages for which CIPA would likely require blocking.

Overall Miscategorization Rates

Overall, researchers found that blocking companies assigned blocked web pages the wrong blocking code between 29.70% and 58.00% of the time depending on the blocking product. Miscategorization rates by blocking product appear below.

Verification by Internet Content Rating Association Rating System

To provide more independent verification of the block code miscategorization, the researchers used the rating system developed by the Internet Content Rating Association (ICRA) to rate each web page according to the ICRA's rating system including blocking codes of Nudity and Sexuality, Violence, Other Topics (such as promotion of tobacco, alcohol, or drug use, discrimination, and gambling), and Chat. [11] Although the researchers in this study retain a healthy skepticism of the effectiveness of the ICRA rating system, many accept it as a standard. [12]

Likelihood of Human Review

A side-effect result was the discovery that researchers verifying block codes assigned by blocking software companies required one day's work for each 100 pages. Cyveillance reported on July 10, 2000, that the World Wide Web had 2.1 billion unique, publicly available pages and that the World Wide Web was growing at a rate of more than 7 million pages each day. [4] Google estimates they index more than three billion web addresses. [8] The federal district court decision striking the library portion of CIPA estimates 1.5 million new pages per day. [28]

SurfControl lays claim on its website to a block list of:

> 4.5 Million Sites, Covering More Than 800 Million Web Pages - Content is sourced by 40+ team of professional researchers, state-of-the-art automated tools, and customer submissions.

Although the number of pages cited could represent 38% of the web as of July 2000, it is not clear from SurfControl's marketing materials if the company performed a human review of all of the pages or even of just one page on each website.

And also from SurfControl's website:

> Daily Updates to Customers
>
> We keep our customers current with the rapid changes on the Internet.
>
> * Daily updates to the SurfControl URL Category List representing an average of 25,000 new sites a week

N2H2 claims on its website:

> The N2H2 Human Review Advantage
>
> N2H2 employs a full-time staff to compile its extensive categorized database of Web content. While others rely solely on technology to detect and harvest Web content,

N2H2's proprietary process uses a unique combination of technology and human review. This process reduces frustrations associated with "keyword blocking" methods including denied access to sites regarding breast cancer, sex education, religion, and health. Effective human review - like the processes employed by N2H2- is the only way to ensure accurate categorization of Web content.

Assuming Cyveillance's conservative estimates of Web size, assuming blocking software companies really are using human review to assign block codes to web pages, and assuming that blocking software company employees work with the same diligence as the study researchers, it would have required 57,534 people working eight hours with occasional breaks every day with no weekends or holidays off for the entire year of 2000 to assign block codes to the existing web pages on the Internet. It would require another 70,000 people working each day to keep up with the growth rate of the Internet in 2000. Even if Internet growth slowed substantially and even if blocking software company employees have developed techniques to review web pages an order of magnitude faster than study researchers, there is no practical way for companies of the size of current blocking software companies to engage in any meaningful kind of human review to provide block code assignments for all or even a significant portion of the web pages on the Internet.

N2H2 Blocking Codes

N2H2 Bess blocked more with the Free Pages and Electronic Commerce block codes by far than with the other block codes. The product therefore blocked vast swathes of the Internet simply for publication on a web page that the publisher may or may not have paid to publish and those published as commercial web pages, regardless of whether the page actually offered anything for sale.

N2H2 Blocking Code Distribution

Out of 31 total blocking codes encountered, the top ten N2H2 Bess codes that blocked web pages most frequently in the public school installation researched by this study were:

1) Free Pages (block, 38.68% of all pages blocked, 13,193 pages blocked)

2) Electronic Commerce (block, 21.04%, 7,177)

3) Message/Bulletin Boards (block, 7.04%, 2,402)

4) Recreation/Entertainment (block, 6.27%, 2,140)

5) Pornography (block, 4.09%, 1,396)

6) Games (block, 3.07%, 1,048)

7) Sex (block, 2.96%, 1,011)

8) Profanity (block, 2.92%, 997)

9) School Cheating (block, 2.07%, 706)

10) Nudity (block, 1.76%, 599)

N2H2 lists the following block and allow codes as "CIPA-compliant," in effect pointing out that use of other categories would clearly step beyond the blocking required by the Children's Internet Protection Act:

1) Pornography (block, 4.09% of all pages blocked, 1,396 pages blocked)

2) Sex (block, 2.96%, 1,011)

3) Education (allow, 0.06%, 22)

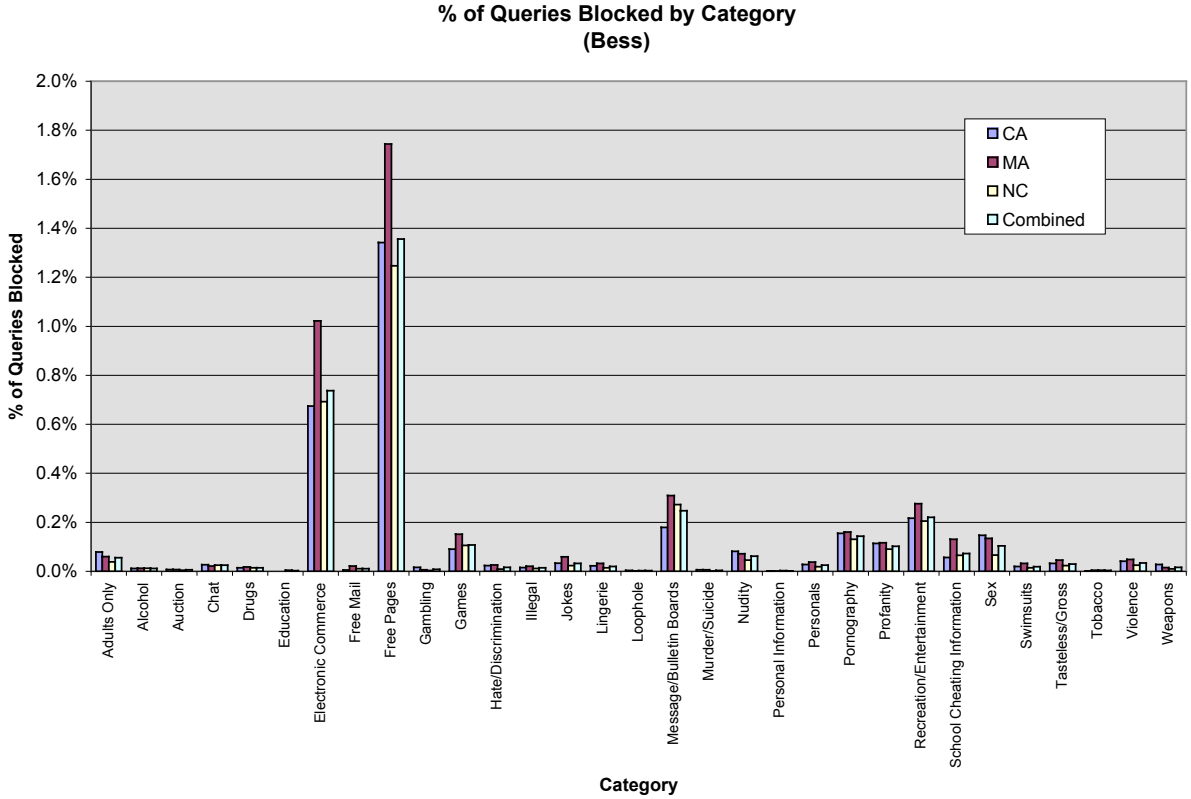
4) History (allow, 0.00%, 0)

5) Medical (allow, 0.00%, 0)

6) Text/Spoken Only (allow, 0.00%, 0)

It is interesting to note that of more than 31,549 curriculum-related web pages blocked by N2H2 Bess in this study, apparently only 22 of the pages, or 0.07% of those curriculum-related pages otherwise blocked by N2H2 Bess, were in fact allowed by the Education "allow" code.

Furthermore, as described in the "Considerations" section, the block codes N2H2 identifies as "CIPA-compliant" also clearly step beyond the blocking required by CIPA.



N2H2 Block Codes Related to CIPA

How does CIPA compliance enter into the picture? If we accept at face value N2H2's own definitions, the researchers found that no more than 2,407 pages, that is no more than 7.05% of all pages blocked, are blocked with block codes that N2H2 has indicated are the codes required for CIPA compliance, that is 4.09% from Pornography and 2.96% from Sex. However, N2H2 Bess blocking codes include not only visual depictions but also non-visual depictions in their definitions, unlike what CIPA requires.

Focusing specifically on web pages blocked in the N2H2 Bess Adults Only, Pornography, and Sex block codes for which CIPA would likely require blocking, the researchers found that out of the sample of 294 accessible pages of 315 pages tested of the total 31,549 curriculum-related web pages blocked by N2H2 Bess in this study, of the 34 pages blocked using the three block codes, N2H2 overblocked 94.12% ±7.63% (95% confidence interval) (32 web pages), and more specifically:

- Of 5 pages blocked as Adults Only, N2H2 Bess blocked 100.00% ±0.00% (95% confidence interval) (5 web pages) inappropriately.
- Of 20 pages blocked as Pornography, N2H2 Bess blocked 90.00% ±13.00% (95% confidence interval) (18 web pages) inappropriately.
- Of 9 pages blocked as Sex, N2H2 Bess blocked 100.00% ±0.00% (95% confidence interval) (9 web pages) inappropriately.

N2H2 Blocking Code Miscategorization

In a sample of the first 266 of the overall 31,549 web pages blocked by N2H2 Bess in this study, N2H2 assigned 79 pages or 29.70% ±5.58% (95% confidence interval) to the wrong block code. In the case of the pages blocked by the Pornography and Sex codes advertised as facilitating CIPA compliance, N2H2 miscategorized every page (100% miscategorization) in the sample.

Focusing specifically on block code miscategorization of those web pages blocked in the N2H2 Bess Adults Only, Pornography, and Sex block codes most pertinent to CIPA, the researchers found that out of the sample of 294 accessible pages of 315 pages tested of the total 31,549 curriculum-related web pages blocked by N2H2 Bess in this study, of the 34 pages blocked using the three block codes, N2H2 Bess miscategorized 85.29% ±11.49% (95% confidence interval) (29 web pages), and more specifically:

- Of 5 pages blocked as Adults Only, N2H2 Bess miscategorized 100.00% ±0.00% (95% confidence interval) (5 web pages).
- Of 20 pages blocked as Pornography, N2H2 Bess miscategorized 90.00% ±13.00% (95% confidence interval) (18 web pages).
- Of 9 pages blocked as Sex, N2H2 Bess miscategorized 66.67% ±31.02% (95% confidence interval) (6 web pages).

SurfControl Blocking Codes

SurfControl blocked more web pages with the Education block code by far than with the other block codes.

SurfControl Blocking Code Distribution

With all 40 blocking codes activated, the top ten SurfControl codes that blocked web pages most frequently in the public school installation researched by this study were:

1) Education (50.96% of all pages blocked, 318,049 pages blocked)
2) Government & Politics (9.08%, 56,647)
3) Arts & Entertainment (7.63%, 47,611)
4) Computing & Internet (6.58%, 41,069)
5) Health & Medicine (5.23%, 32,655)
6) Reference (3.27%, 20,404)
7) Hosting Sites (3.20%, 20,001)
8) News (2.05%, 12,821)

9) Shopping (2.02%, 12,623)

10) Lifestyle & Culture (1.92%, 12,010)

The 10 "core" SurfControl block codes blocked curriculum-related web pages with the following frequencies:

1) Adult/Sexually Explicit (0.17% of all pages blocked, 1066 pages blocked)

2) Chat (0.02%, 144)

3) Criminal Skills (0.02%, 144)

4) Drugs, Alcohol & Tobacco (0.07%, 406)

5) Gambling (0.03%, 215)

6) Hacking (0.00%, 27)

7) Hate Speech (0.03%, 212)

8) Violence (0.02%, 134)

9) Weapons (0.04%, 240)

10) Web-based Email (0.02%, 94)

And the three additional SurfControl block codes for the "core plus" group blocked curriculum-related web pages with the following frequencies:

11) Glamour & Intimate Apparel (0.03% of all pages blocked, 196 pages blocked)

12) Personals & Dating (0.03%, 180)

13) Sex Education (0.07%, 464)

SurfControl Block Code Related to CIPA

Focusing specifically on web pages blocked in the SurfControl Adult/Sexually Explicit block code for which CIPA would likely require blocking, the researchers found that out of the sample of 324 accessible pages of 351 pages tested of the total 3,522 curriculum-related web pages blocked by the SurfControl "core plus" configuration in this study:

- Of 93 pages blocked as Adult/Sexually Explicit, SurfControl blocked 93.55% ±4.37% (95% confidence interval) (87 web pages) inappropriately.

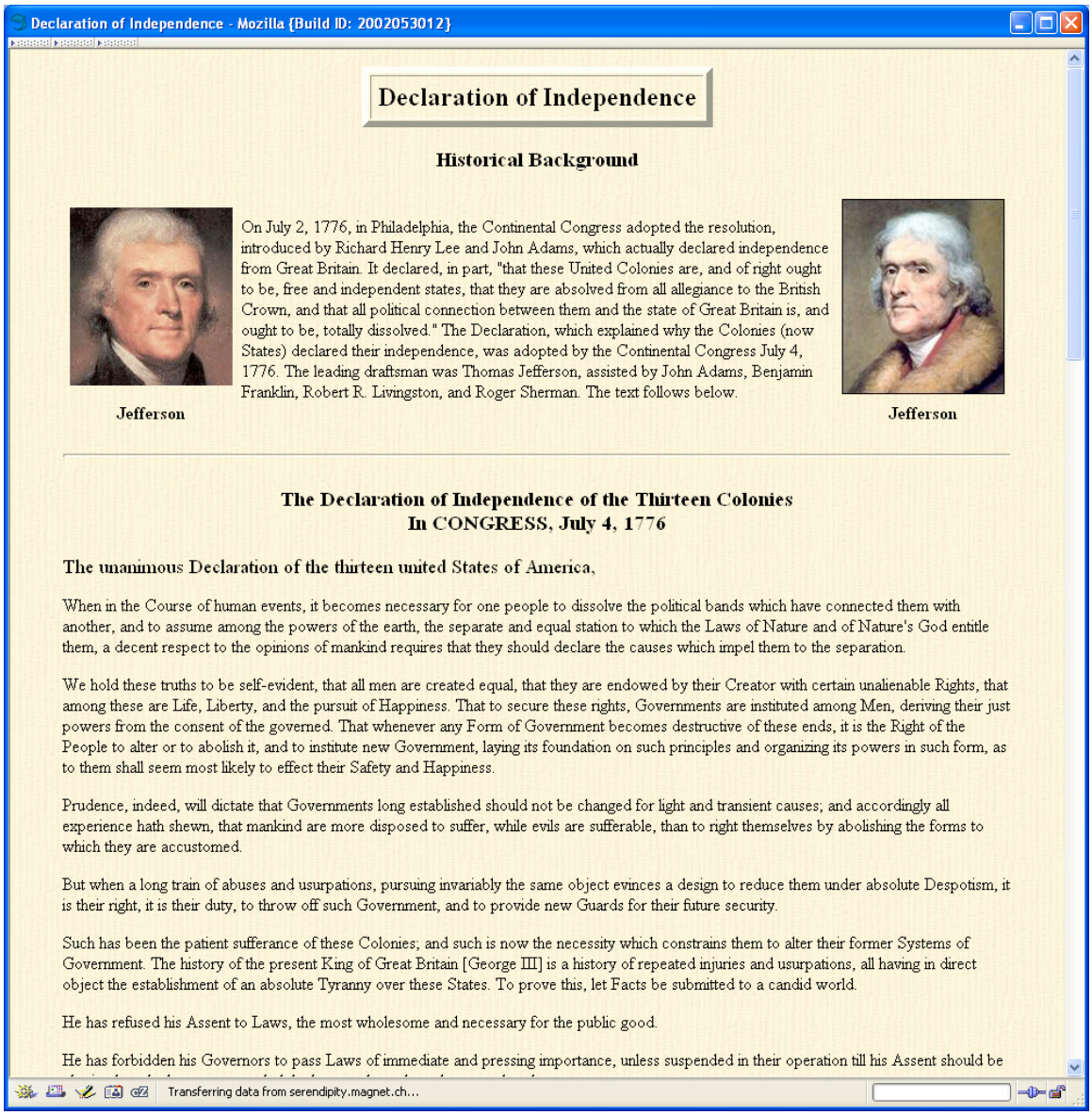
SurfControl Blocking Code Miscategorization

In a sample of the first 265 of the overall 3,522 web pages blocked by SurfControl "core plus" configuration in this study, SurfControl assigned 65.66% ±5.61% (95% confidence

interval) (174 web pages) to the wrong block code according to SurfControl's published blocking code definitions.

Researchers also tested 352 pages spread evenly over the entire sample of 3,522 web pages blocked by SurfControl "core plus" configuration and found that SurfControl assigned 54.94% ±31.02% (95% confidence interval) (178 web pages) the wrong block code according to SurfControl's published blocking code definitions.

For example, SurfControl assigned the Drugs, Alcohol and Tobacco code to the "Declaration of Independence" page blocked containing the historical background and text of the Declaration of Independence located at http://serendipity.magnet.ch/jsmill/decl.html



Focusing specifically on block code miscategorization of those web pages blocked in the SurfControl Adult/Sexually Explicit block code most pertinent to CIPA, the researchers

found that out of the sample of 324 accessible pages of 351 pages tested of the total 3,522 curriculum-related web pages blocked by the SurfControl "core plus" configuration in this study:

- Of 93 pages blocked as Adult/Sexually Explicit, SurfControl miscategorized 78.49% ±7.32% (95% confidence interval) (73 web pages).

Bad Address and Unreachable Statistics

A small percentage of sites found by the Google search engine were unavailable, either because of temporary problems with their hosts or Internet traffic or perhaps because their owners had removed them from the Internet entirely. Researchers controlled for these sites in the study without significantly impacting the statistical analysis.

For initial blocking testing, the researchers found very low rates of bad addresses and unreachable web pages. This is most likely because researchers tested the web addresses against the blocking products relatively soon after generating search results from the state-mandated curriculum topics on Google.

Overall, the average rate of web pages with bad addresses or that were unreachable started at was 0.24% ±0.01% (95% confidence interval) (4,688 pages out of 1,946,430 tested) for both blocking products combined.

For N2H2 Bess, the average rate of bad addresses was 0.28% ±0.01% (95% confidence interval) (2,716 pages out of 973,215 tested) and the average rate of unreachable pages was 0.13% ±0.01% (95% confidence interval) (1,227 pages out of 973,215 tested) for an overall average rate of 0.41% ±0.01% (95% confidence interval) for web pages with bad addresses or that were unreachable (3,943 pages out of 973,215 tested). Removing "k12" pages from the sample, the average rate of bad addresses was 0.30% ±0.01% (95% confidence interval) (2,555 pages out of 860,939 tested) and the average rate of unreachable pages was 0.13% ±0.01% (95% confidence interval) (1,084 pages out of 860,939 tested) for an overall average rate of 0.42% ±0.01% (95% confidence interval) for web pages with bad addresses or that were unreachable (3,639 pages out of 860,939 tested).

SurfControl did not provide messages that enabled the researchers to distinguish between pages that had bad addresses or were unreachable, so the average rate of both bad addresses and unreachable pages combined was 0.08% ±0.01% (95% confidence interval) (745 pages out of 973,215 tested). Removing "k12" pages from the sample, the average rate of both bad addresses and unreachable pages combined was 0.08% ±0.01% (95% confidence interval) (670 pages out of 860,939 tested).

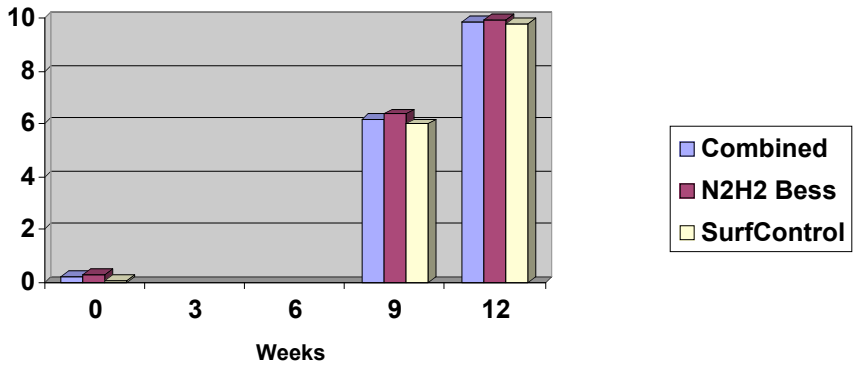
Researchers performed the SurfControl testing the week prior to the N2H2 Bess testing, which may account for the higher rate of bad addresses and unreachable pages for N2H2 Bess.

Overblocking testing took place 9 weeks after the original testing and the average rate of web pages with bad addresses or that were unreachable increased to an overall rate of 6.16% ±1.84% (95% confidence interval) or 41 of the sample of 666 web pages tested out

of all 35,071 web pages tested for overblocking for both products. For N2H2 Bess, the average rate of web pages with bad addresses or that were unreachable increased to 6.35% ±2.73% (95% confidence interval) or 20 of the sample of 315 blocked web pages out of all 31,549 web pages blocked by N2H2 Bess. For SurfControl, the average rate of web pages with bad addresses or that were unreachable increased to 5.98% ±2.40% (95% confidence interval) or 21 of the sample of 351 blocked web pages tested out of all 3,522 web pages blocked by SurfControl "core plus" configuration.

Underblocking testing took place 12 weeks after the original testing and the average rate of web pages with bad addresses or that were unreachable increased to an overall rate of 9.86% ±0.04% (95% confidence interval) or 84,486 of the sample of 857,055 web pages tested out of all 1,230,648 web pages tested for underblocking for both products. For N2H2 Bess, the average rate of web pages with bad addresses or that were unreachable increased to 9.89% ±0.04% (95% confidence interval) or 64,354 of the sample of 650,829 web pages out of all 937,394 web pages tested for underblocking by N2H2 Bess. For SurfControl, the average rate of web pages with bad addresses or that were unreachable increased to 9.76% ±0.07% (95% confidence interval) or 20,132 of the sample of 206,226 web pages out of all 293,254 web pages tested for underblocking by SurfControl "core plus" configuration.

If for a moment we assume that rates of bad addresses or unreachable web pages are similar for populations of both blocked and unblocked web pages, then we can chart the increase in bad addresses and unreachable web pages over time.



The chart demonstrates a likely accelerating rate of overall rates of bad addresses or unreachable web pages in this study, increasing approximately 0.67% to 0.83% per week.

Section 6 Analysis

Examining nearly a million web pages, the researchers found the following:

- For every web page blocked as advertised, blocking software blocks one or more web pages inappropriately, either because the web pages are miscategorized or because the web pages, while correctly categorized, do not merit blocking. In the case of block codes N2H2 suggests for CIPA compliance, N2H2 Bess miscategorized 85% of the distributed sample; that is, 29 of 34 web pages coded as Adults Only, Pornography, or Sex. SurfControl miscategorized 78% of the distributed sample; that is, 87 of 93 web pages coded as Adult or Sexually Explicit.

- Schools that implement Internet blocking software even with the least restrictive settings will block at a minimum tens of thousands of web pages inappropriately, either because the web pages are miscategorized or because the web pages, while correctly categorized, do not merit blocking.

- Blocking software products miscategorized many of the web pages they block—assigning the wrong block codes to between a third and a half of the web pages related to state-mandated curriculums blocked depending on the blocking software.

- Of all pages related to state-mandated curriculums blocked by blocking products, the products blocked only 1-3% of those web pages to CIPA's criteria for blocking visual depictions of illegally obscenity, child pornography, or harmful to minors content. That means that of the web pages related to state-mandated curriculums, blocking software products blocked 97-99% of the web pages blocked using non-standard, discretionary, and potentially illegal criteria beyond what is required by CIPA.

- Although curriculum topic categories more often blocked by N2H2's Bess product in an East Coast high school include such topics as the Klan (36% or web pages related to this curriculum topic blocked), firearms (50%), drunk driving, slavery, genocide, and perjury (33%), they also contain topics such as pogo-stick (46%), comedy (42%), personal care (32%), likes and dislikes (32%), blend sounds to make words (24%), and write or dictate short poems (32%).

- Schools that implement Internet blocking software with the least restrictive commonly-used settings will block between 1/2% and 5% of search results based on state-mandated curriculum topics.

- Schools that implement Internet blocking software with the most restrictive settings block 70% or more of search results based on state-mandated curriculum topics.

- Internet blocking software was not able to detect and protect students from access to many of the relatively small quantity of apparently pornographic sites that appeared in search results related to state-mandated curriculums.

- Internet blocking software companies cannot possibly complete human review of a substantial portion of the web pages on the Internet.

Effects on Students

State school boards intend that students have easy access to the topics mandated by curriculum for each. Unfortunately, the restrictions that blocking software put in place limit such access, undoubtedly causing students unnecessary frustration and difficulty. Such frustration likely dampens student enthusiasm for educational assignments and definitely restricts important educational opportunities. [13]

The Internet has become the largest library in the world, collecting the work of millions of individuals and groups into an ever-increasing array of information. However, students cannot realize this promise of the Internet as a learning tool with Internet blocking software hindering its accessibility. Students find that limiting Internet access makes some pieces of necessary information entirely inaccessible, as schools' physical libraries cannot possibly stock entirely up-to-date material on all topics available easily on the Internet.

Biases and mistakes inherent in Internet blocking software reduce the student's access to materials directly related to state-mandated curriculum topics in school without adequately shielding the students from "objectionable content." Blocking software frequently "underblocks" illegally obscenity, child pornography, and harmful to minors materials, contradicting the claims of marketing campaigns, and rendering it ineffective in its primary goal. [8] [8]

Effects on Teachers

Under current Internet blocking software mandates, teachers will struggle to make use of the Internet as the wonderful library and complement to in-class teaching that it can be. They usually are not given the discretion to permit their students access to inaccurately blocked sites, at least not in a timely manner. Blocking software's tendency to "overblock," or prevent access to pedagogically appropriate websites proves to be another of the software's deficiencies.

Within the schools, teachers may find their own Internet researches blocked. The software limits teachers just as it limits students, further complicating and inhibiting the educational experience.

Internet blocking software takes the right to determine what content is harmful to children out of the hands of teachers, school boards, parents, and even the federal government, placing it instead in the hands of the blocking software companies, whose employees often have no background in law or education and may not even be aware of CIPA's legal standards.

Impact on Legal Proceedings

This study provides more evidence to use in the ongoing legal battle against CIPA and similar legislation. It demonstrates that Internet blocking software prevents students from accessing resources related to state-mandated curriculum topics and fails to protect them from a significant portion of material that could be classified as harmful to minors. It serves as groundwork for a potential in-depth future study within the schools that will investigate how students use the Internet within the educational environment and how blocking software affects this use.

Section 7 Conclusions

Based on the results obtained from this study, we draw the following conclusions:

- The use of Internet blocking software in schools cannot ensure school compliance with requirements of the Children's Internet Protection Act because schools using the software do not set the products to block specifically what's required by law and because the blocking software is not capable of blocking specifically what's required by law. The blocking software underblocks many web pages that the courts could interpret CIPA to require blocked and overblocks access to many web pages protected by the First Amendment to the U.S. Constitution.

- The use of Internet blocking software does not protect children from exposure to many materials that are harmful to minors, so schools should explore less restrictive alternatives, such as adoption and enforcement of Internet use policies, media literacy education, directed use, and supervised use, in order to handle the problem. [10]

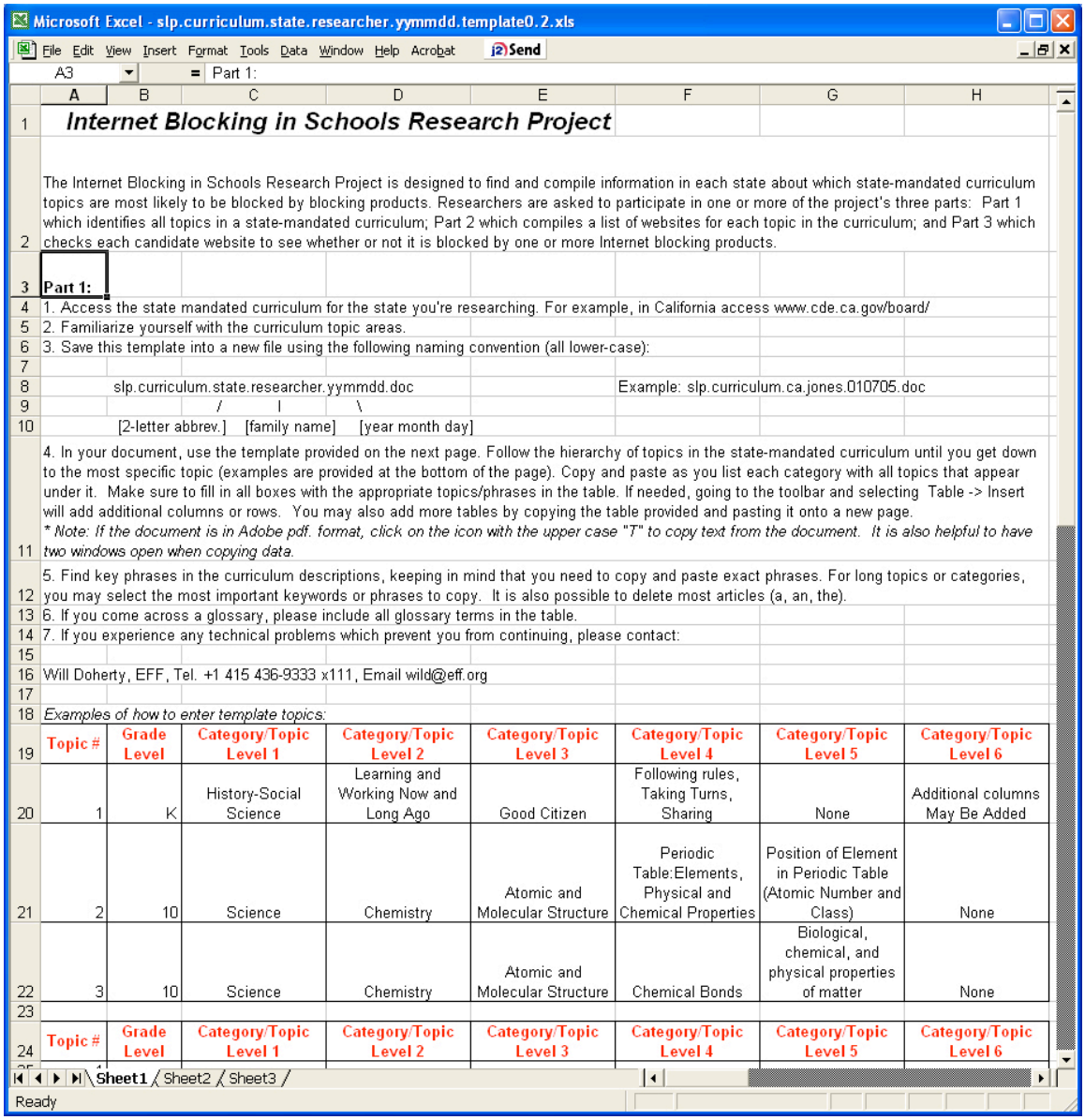
- The use of Internet blocking software in schools damages significantly educational opportunities for students, both by blocking student access to web pages that are directly related to state-mandated curriculums and by restricting broader inquiries of both students and teachers.

Section 8

Appendix A

Research Database

- Sample Database with Instructions:



Microsoft Excel - slp.curriculum.state.researcher.yymmdd.template0.2.xls

File Edit View Insert Format Tools Data Window Help Acrobat Send

A3 = Part 1:

	A	B	C	D	E	F	G	H
1	*Internet Blocking in Schools Research Project*							
2	The Internet Blocking in Schools Research Project is designed to find and compile information in each state about which state-mandated curriculum topics are most likely to be blocked by blocking products. Researchers are asked to participate in one or more of the project's three parts: Part 1 which identifies all topics in a state-mandated curriculum; Part 2 which compiles a list of websites for each topic in the curriculum; and Part 3 which checks each candidate website to see whether or not it is blocked by one or more Internet blocking products.							
3	**Part 1:**							
4	1. Access the state mandated curriculum for the state you're researching. For example, in California access www.cde.ca.gov/board/							
5	2. Familiarize yourself with the curriculum topic areas.							
6	3. Save this template into a new file using the following naming convention (all lower-case):							
7								
8		slp.curriculum.state.researcher.yymmdd.doc				Example: slp.curriculum.ca.jones.010705.doc		
9		/	|	\				
10		[2-letter abbrev.]	[family name]	[year month day]				
11	4. In your document, use the template provided on the next page. Follow the hierarchy of topics in the state-mandated curriculum until you get down to the most specific topic (examples are provided at the bottom of the page). Copy and paste as you list each category with all topics that appear under it. Make sure to fill in all boxes with the appropriate topics/phrases in the table. If needed, going to the toolbar and selecting Table -> Insert will add additional columns or rows. You may also add more tables by copying the table provided and pasting it onto a new page. ** Note: If the document is in Adobe pdf. format, click on the icon with the upper case "T" to copy text from the document. It is also helpful to have two windows open when copying data.*							
12	5. Find key phrases in the curriculum descriptions, keeping in mind that you need to copy and paste exact phrases. For long topics or categories, you may select the most important keywords or phrases to copy. It is also possible to delete most articles (a, an, the).							
13	6. If you come across a glossary, please include all glossary terms in the table.							
14	7. If you experience any technical problems which prevent you from continuing, please contact:							
15								
16	Will Doherty, EFF, Tel. +1 415 436-9333 x111, Email wild@eff.org							
17								
18	*Examples of how to enter template topics:*							
19	Topic #	Grade Level	Category/Topic Level 1	Category/Topic Level 2	Category/Topic Level 3	Category/Topic Level 4	Category/Topic Level 5	Category/Topic Level 6
20	1	K	History-Social Science	Learning and Working Now and Long Ago	Good Citizen	Following rules, Taking Turns, Sharing	None	Additional columns May Be Added
21	2	10	Science	Chemistry	Atomic and Molecular Structure	Periodic Table:Elements, Physical and Chemical Properties	Position of Element in Periodic Table (Atomic Number and Class)	None
22	3	10	Science	Chemistry	Atomic and Molecular Structure	Chemical Bonds	Biological, chemical, and physical properties of matter	None
23								
24	Topic #	Grade Level	Category/Topic Level 1	Category/Topic Level 2	Category/Topic Level 3	Category/Topic Level 4	Category/Topic Level 5	Category/Topic Level 6

Sheet1 Sheet2 Sheet3

Ready

Section 9

Appendix B

Blocking Software Company and Internet Rating Association Publications

- Internet Content Rating Association ICRA Descriptors
  http://icra.org/_en/label/extended/#genhelp
  [reprinted on following pages]

- N2H2 Bess Filtering Categories
  http://n2h2.com/products/bess.php?os=filtering_info&content=categories
  [reprinted on following pages]

- N2H2 Bess Internet Filtering Products
  http://www.n2h2.com/products/bess.php?device_type=filtering_info&content=main

- N2H2 Press Release
  http://www.n2h2.com/about/press/release_archive/05-17-00.php

- N2H2 Company Info, Business Description and Competitors
  http://www.ipo.com/ipoinfo/printprofile.aps?p-IPO&c=NTWO

- N2H2 About N2H2
  http://www.n2h2.com/about/index.php

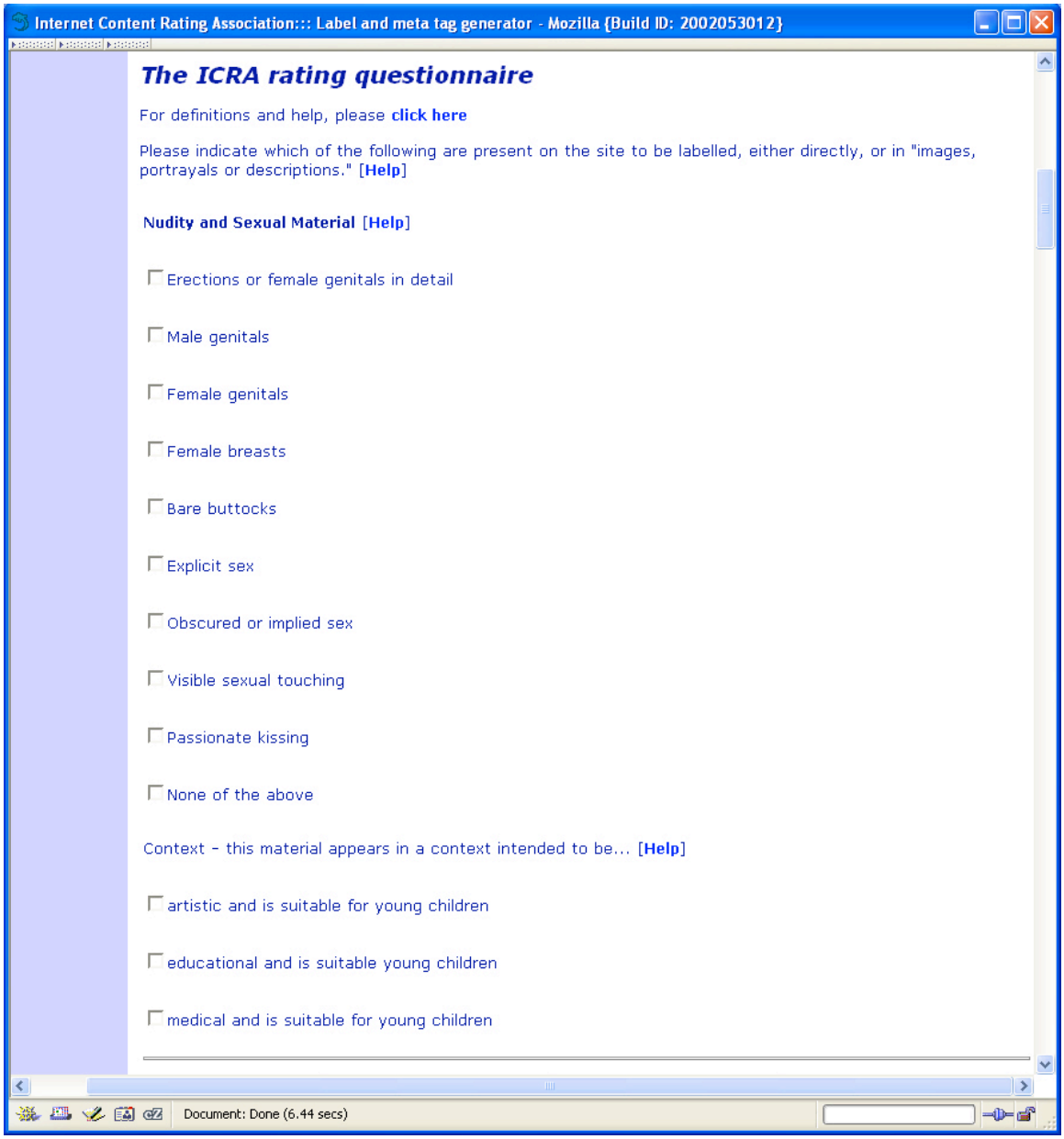
- N2H2 Bess Internet Filtering Products
  http://www.n2h2.com/products/bess.php?device_type=filtering_info&content=main

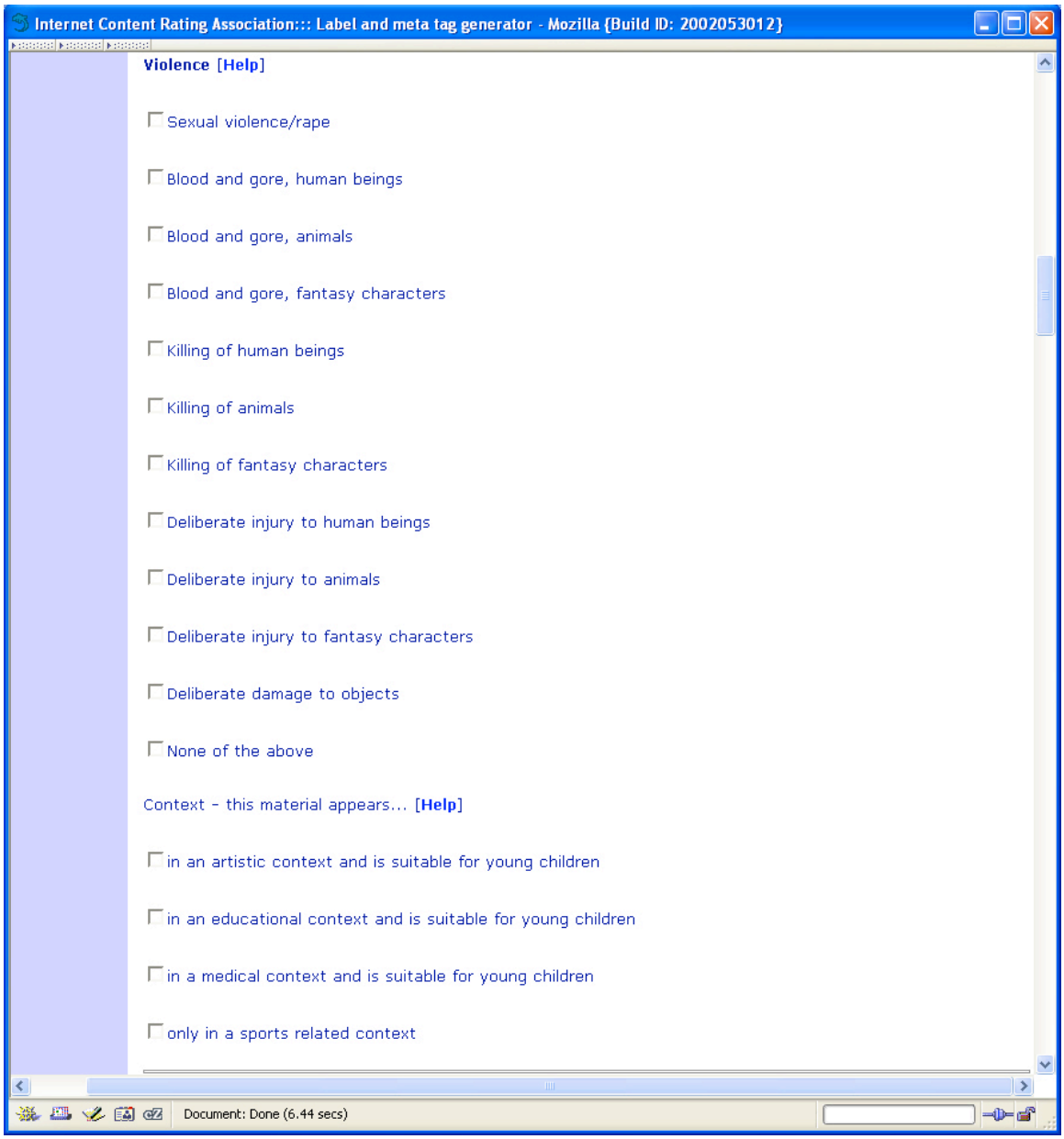
- SurfControl Company Information
  http://www.cyberpatrol.com/about_us/

- SurfControl URL Category List
  http://www.surfcontrol.com/products/content/internet_databases/url_category_list/default.aspx
  [reprinted on following pages]

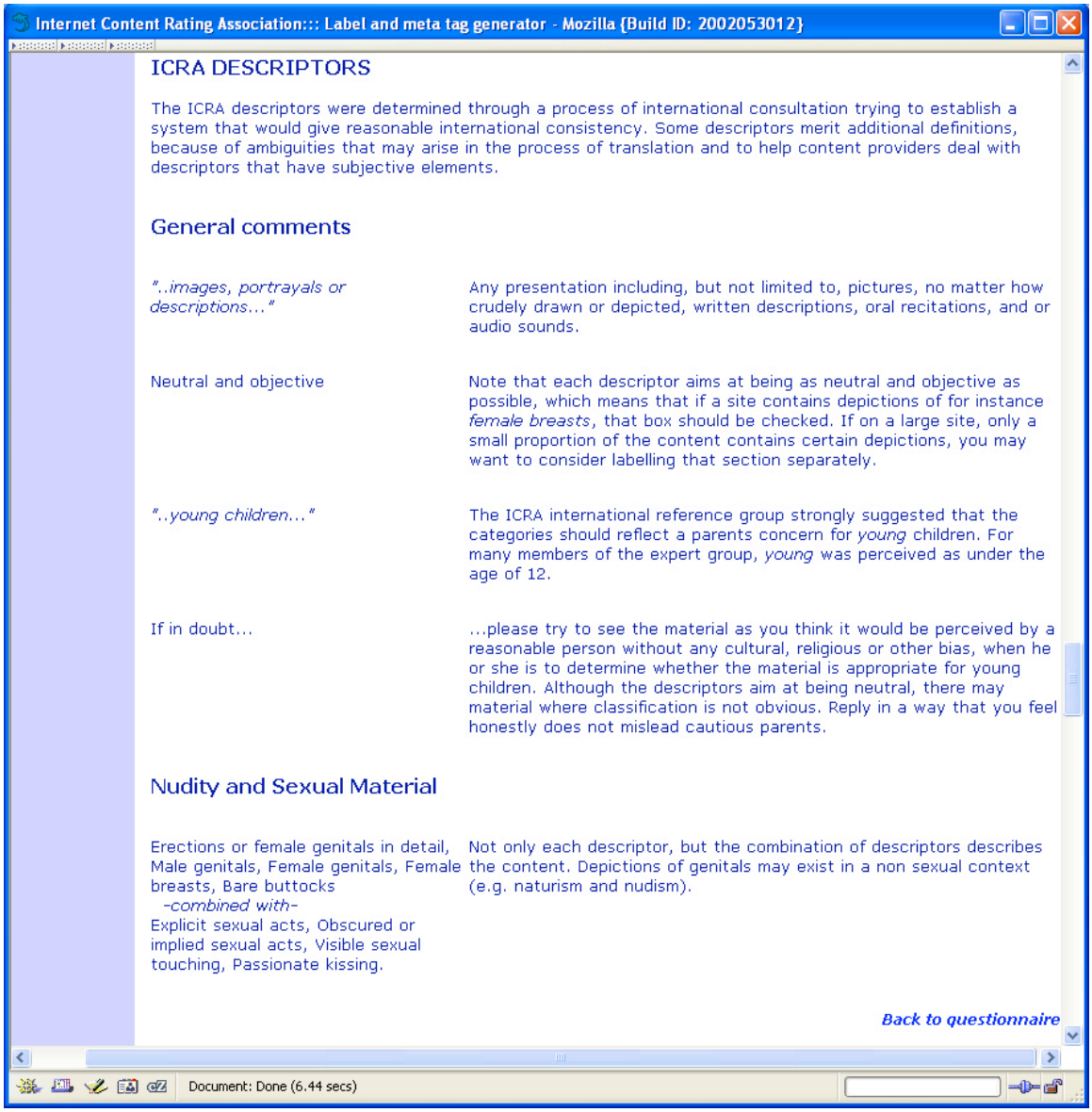
Internet Content Rating Association Block Codes

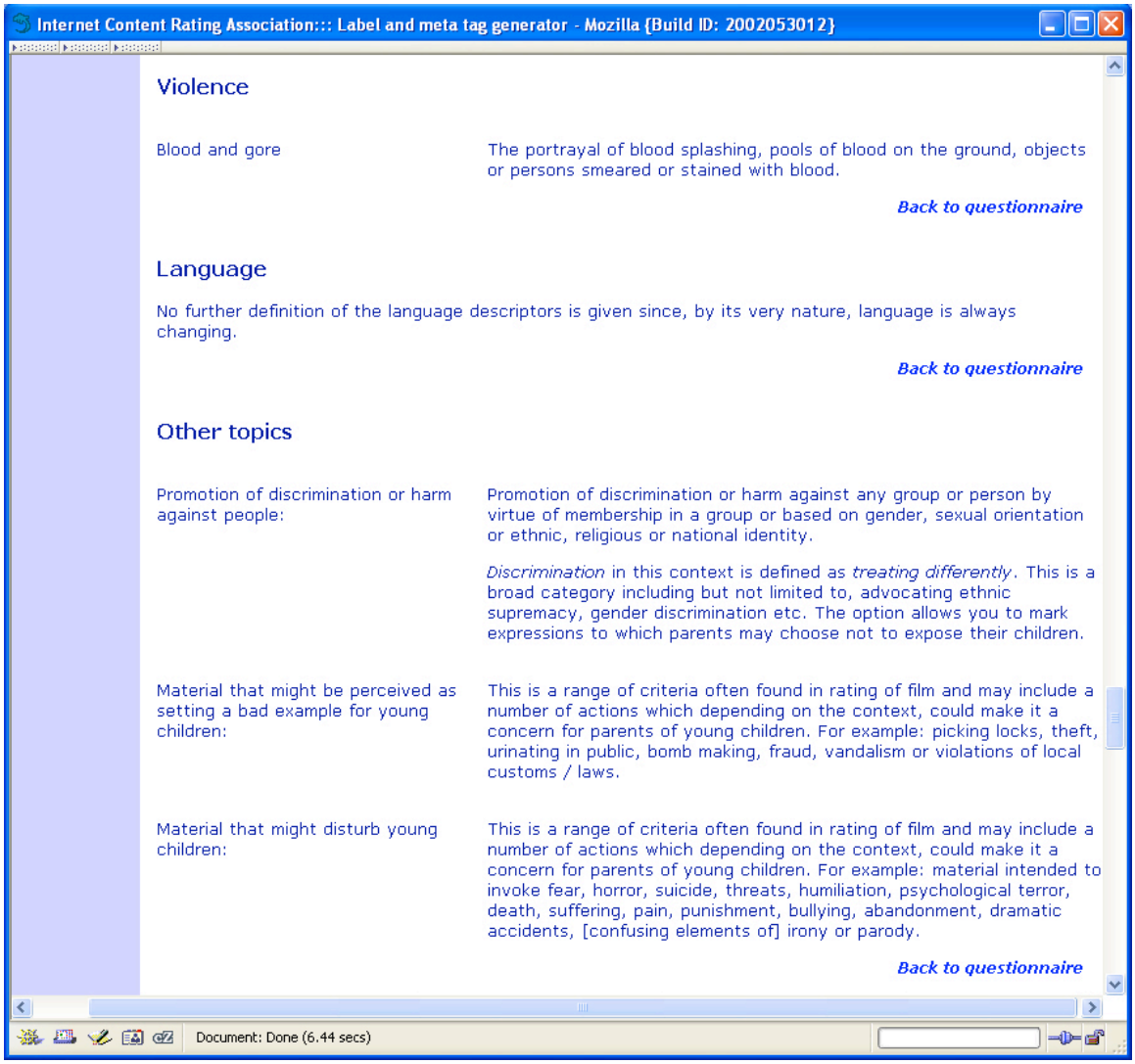
The Internet Content Rating Association's descriptions of their ICRA Internet content rating system blocking codes appear below and at http://icra.org/_en/label/extended/#genhelp




Internet Content Rating Association::: Label and meta tag generator - Mozilla {Build ID: 2002053012}
Violence [Help]
Sexual violence/rape
Blood and gore, human beings
Blood and gore, animals
Blood and gore, fantasy characters
Killing of human beings
Killing of animals
Killing of fantasy characters
Deliberate injury to human beings
Deliberate injury to animals
Deliberate injury to fantasy characters
Deliberate damage to objects
None of the above
Context - this material appears... [Help]
in an artistic context and is suitable for young children
in an educational context and is suitable for young children
in a medical context and is suitable for young children
only in a sports related context
Document: Done (6.44 secs)

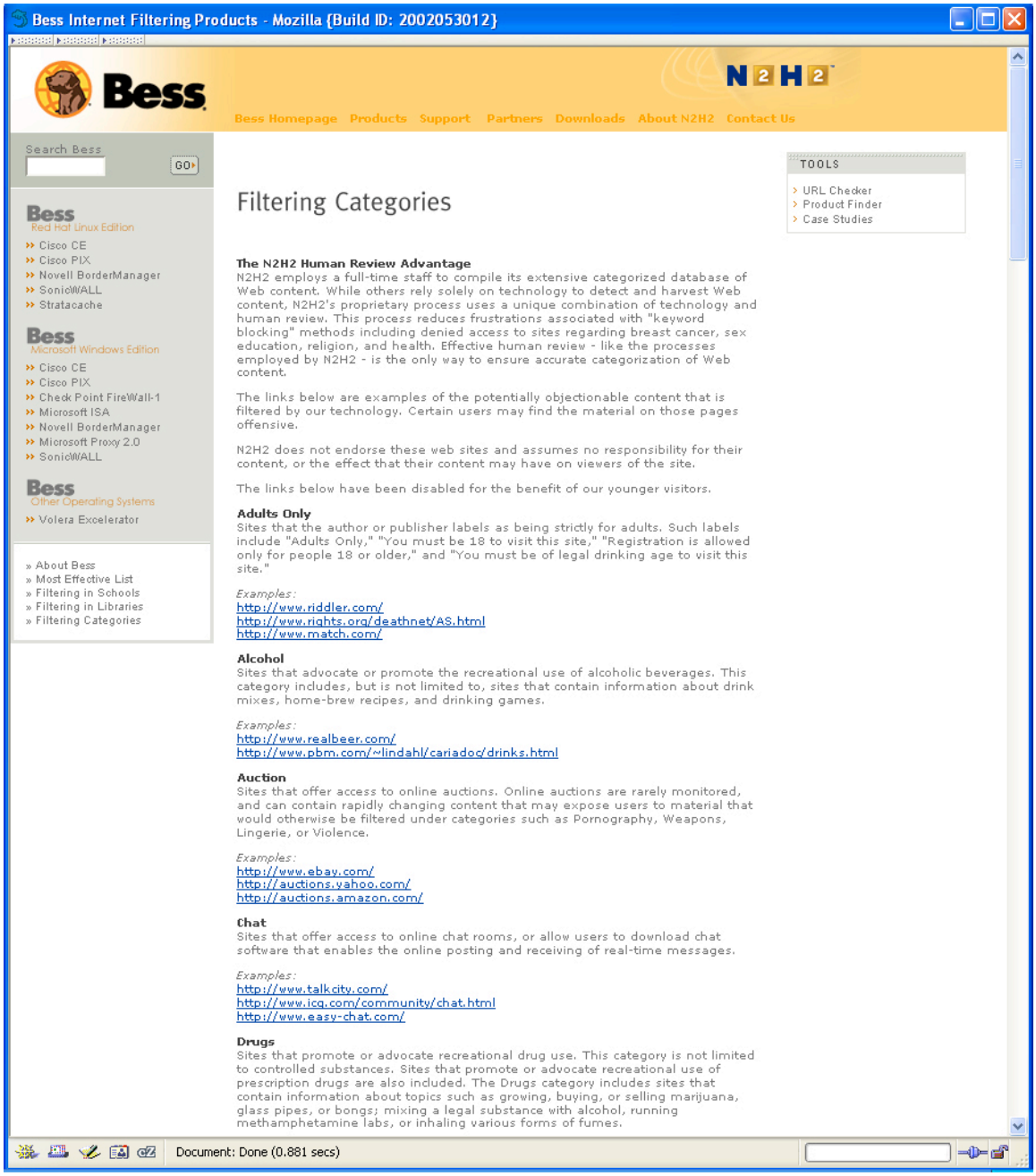
Internet Content Rating Association::: Label and meta tag generator - Mozilla {Build ID: 2002053012}
Language [Help]
Explicit sexual
Crude/profanity
Mild expletives
None of the above
Others [Help]
Promotion of tobacco use
Promotion of alcohol use
Promotion of drug use
Gambling
Promotion of weapon use
Promotion of harm against people
Material that might be perceived as setting a bad example for young children
Material that might disturb young children
None of the above
Chat [Help]
Unmoderated chat
Moderated chat
Neither of the above
Document: Done (6.44 secs)

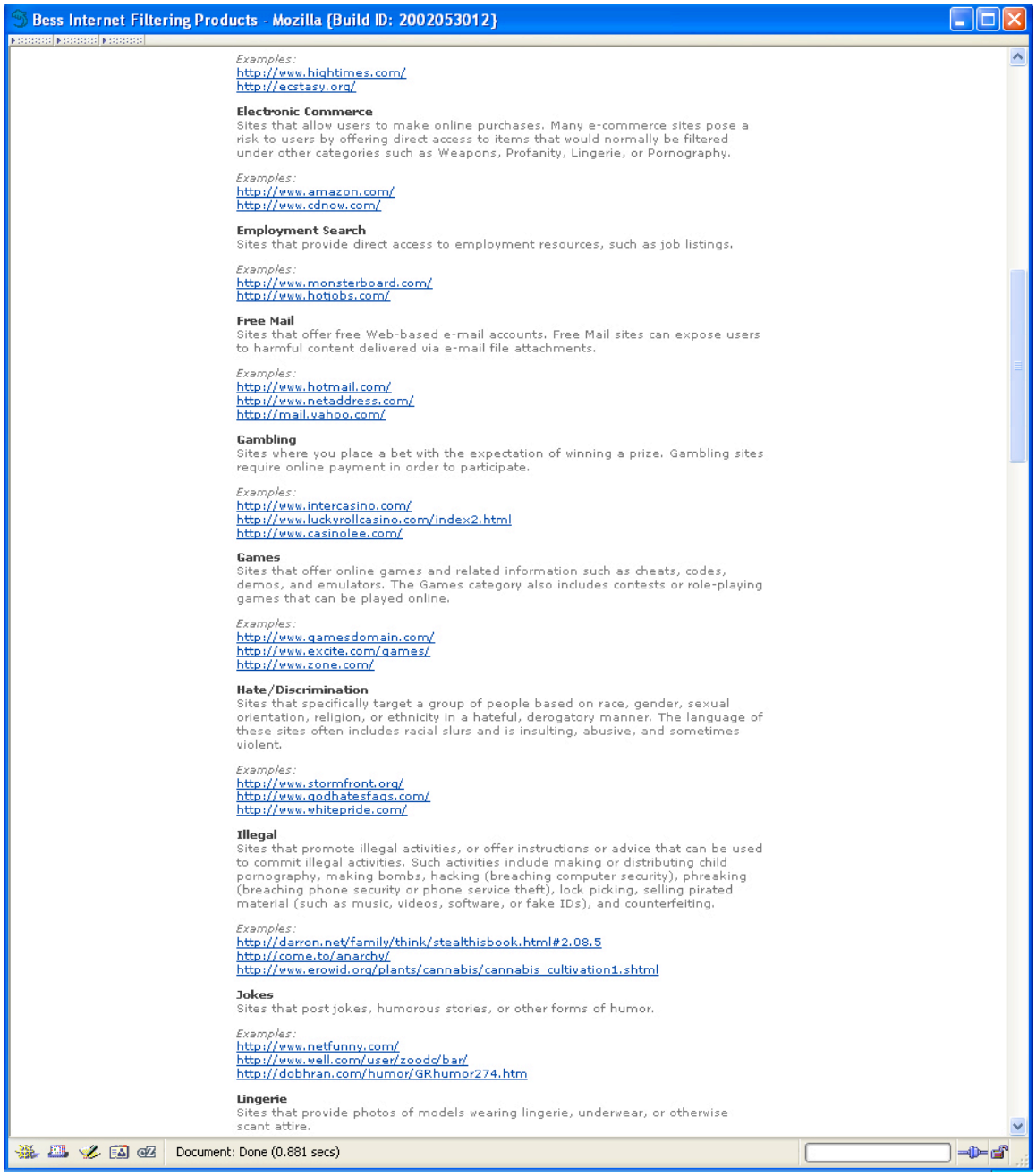

Internet Content Rating Association::: Label and meta tag generator - Mozilla {Build ID: 2002053012}
ICRA DESCRIPTORS
The ICRA descriptors were determined through a process of international consultation trying to establish a system that would give reasonable international consistency. Some descriptors merit additional definitions, because of ambiguities that may arise in the process of translation and to help content providers deal with descriptors that have subjective elements.
General comments
"..images, portrayals or descriptions..."
Any presentation including, but not limited to, pictures, no matter how crudely drawn or depicted, written descriptions, oral recitations, and or audio sounds.
Neutral and objective
Note that each descriptor aims at being as neutral and objective as possible, which means that if a site contains depictions of for instance female breasts, that box should be checked. If on a large site, only a small proportion of the content contains certain depictions, you may want to consider labelling that section separately.
"..young children..."
The ICRA international reference group strongly suggested that the categories should reflect a parents concern for young children. For many members of the expert group, young was perceived as under the age of 12.
If in doubt...
...please try to see the material as you think it would be perceived by a reasonable person without any cultural, religious or other bias, when he or she is to determine whether the material is appropriate for young children. Although the descriptors aim at being neutral, there may material where classification is not obvious. Reply in a way that you feel honestly does not mislead cautious parents.
Nudity and Sexual Material
Erections or female genitals in detail, Male genitals, Female genitals, Female breasts, Bare buttocks
-combined with-
Explicit sexual acts, Obscured or implied sexual acts, Visible sexual touching, Passionate kissing.
Not only each descriptor, but the combination of descriptors describes the content. Depictions of genitals may exist in a non sexual context (e.g. naturism and nudism).
Back to questionnaire
Document: Done (6.44 secs)


Internet Content Rating Association::: Label and meta tag generator - Mozilla {Build ID: 2002053012}
Violence
Blood and gore
The portrayal of blood splashing, pools of blood on the ground, objects or persons smeared or stained with blood.
Back to questionnaire
Language
No further definition of the language descriptors is given since, by its very nature, language is always changing.
Back to questionnaire
Other topics
Promotion of discrimination or harm against people:
Promotion of discrimination or harm against any group or person by virtue of membership in a group or based on gender, sexual orientation or ethnic, religious or national identity.
Discrimination in this context is defined as treating differently. This is a broad category including but not limited to, advocating ethnic supremacy, gender discrimination etc. The option allows you to mark expressions to which parents may choose not to expose their children.
Material that might be perceived as setting a bad example for young children:
This is a range of criteria often found in rating of film and may include a number of actions which depending on the context, could make it a concern for parents of young children. For example: picking locks, theft, urinating in public, bomb making, fraud, vandalism or violations of local customs / laws.
Material that might disturb young children:
This is a range of criteria often found in rating of film and may include a number of actions which depending on the context, could make it a concern for parents of young children. For example: material intended to invoke fear, horror, suicide, threats, humiliation, psychological terror, death, suffering, pain, punishment, bullying, abandonment, dramatic accidents, [confusing elements of] irony or parody.
Back to questionnaire
Document: Done (6.44 secs)

N2H2 Bess Block Codes

N2H2's descriptions of their Bess blocking product's blocking codes appear below and at http://n2h2.com/products/bess.php?os=filtering_info&content=categories




Bess Internet Filtering Products - Mozilla {Build ID: 2002053012}
Examples:
http://www.hightimes.com/
http://ecstasy.org/
Electronic Commerce
Sites that allow users to make online purchases. Many e-commerce sites pose a risk to users by offering direct access to items that would normally be filtered under other categories such as Weapons, Profanity, Lingerie, or Pornography.
Examples:
http://www.amazon.com/
http://www.cdnow.com/
Employment Search
Sites that provide direct access to employment resources, such as job listings.
Examples:
http://www.monsterboard.com/
http://www.hotjobs.com/
Free Mail
Sites that offer free Web-based e-mail accounts. Free Mail sites can expose users to harmful content delivered via e-mail file attachments.
Examples:
http://www.hotmail.com/
http://www.netaddress.com/
http://mail.yahoo.com/
Gambling
Sites where you place a bet with the expectation of winning a prize. Gambling sites require online payment in order to participate.
Examples:
http://www.intercasino.com/
http://www.luckyrollcasino.com/index2.html
http://www.casinolee.com/
Games
Sites that offer online games and related information such as cheats, codes, demos, and emulators. The Games category also includes contests or role-playing games that can be played online.
Examples:
http://www.gamesdomain.com/
http://www.excite.com/games/
http://www.zone.com/
Hate/Discrimination
Sites that specifically target a group of people based on race, gender, sexual orientation, religion, or ethnicity in a hateful, derogatory manner. The language of these sites often includes racial slurs and is insulting, abusive, and sometimes violent.
Examples:
http://www.stormfront.org/
http://www.godhatesfags.com/
http://www.whitepride.com/
Illegal
Sites that promote illegal activities, or offer instructions or advice that can be used to commit illegal activities. Such activities include making or distributing child pornography, making bombs, hacking (breaching computer security), phreaking (breaching phone security or phone service theft), lock picking, selling pirated material (such as music, videos, software, or fake IDs), and counterfeiting.
Examples:
http://darron.net/family/think/stealthisbook.html#2.08.5
http://come.to/anarchy/
http://www.erowid.org/plants/cannabis/cannabis_cultivation1.shtml
Jokes
Sites that post jokes, humorous stories, or other forms of humor.
Examples:
http://www.netfunny.com/
http://www.well.com/user/zoodo/bar/
http://dobhran.com/humor/GRhumor274.htm
Lingerie
Sites that provide photos of models wearing lingerie, underwear, or otherwise scant attire.
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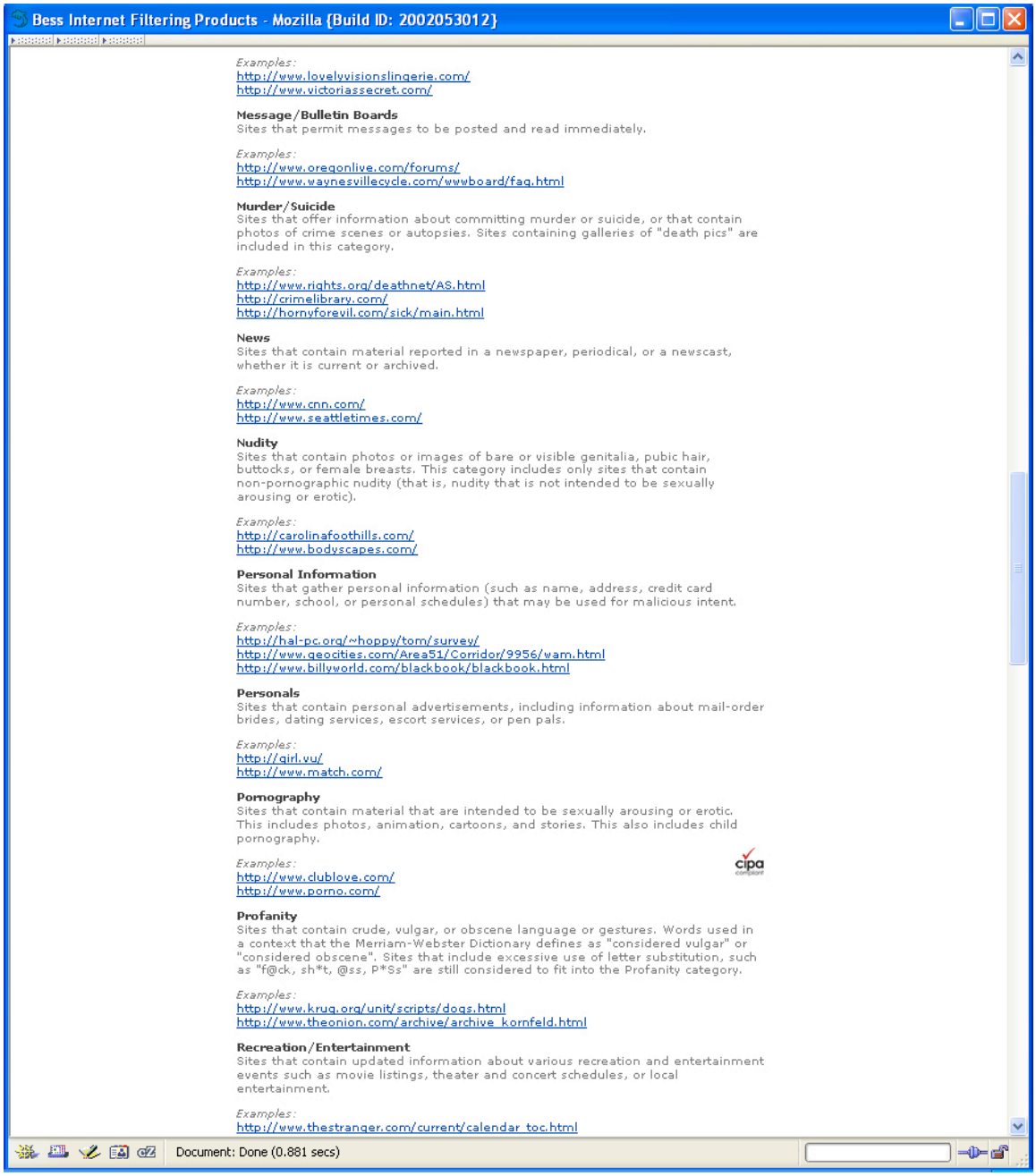
Bess Internet Filtering Products - Mozilla {Build ID: 2002053012}
Examples:
http://www.lovelyvisionslingerie.com/
http://www.victoriassecret.com/
Message/Bulletin Boards
Sites that permit messages to be posted and read immediately.
Examples:
http://www.oregonlive.com/forums/
http://www.waynesvillecycle.com/wwwboard/faq.html
Murder/Suicide
Sites that offer information about committing murder or suicide, or that contain photos of crime scenes or autopsies. Sites containing galleries of "death pics" are included in this category.
Examples:
http://www.rights.org/deathnet/AS.html
http://crimelibrary.com/
http://hornyforevil.com/sick/main.html
News
Sites that contain material reported in a newspaper, periodical, or a newscast, whether it is current or archived.
Examples:
http://www.cnn.com/
http://www.seattletimes.com/
Nudity
Sites that contain photos or images of bare or visible genitalia, pubic hair, buttocks, or female breasts. This category includes only sites that contain non-pornographic nudity (that is, nudity that is not intended to be sexually arousing or erotic).
Examples:
http://carolinafoothills.com/
http://www.bodyscapes.com/
Personal Information
Sites that gather personal information (such as name, address, credit card number, school, or personal schedules) that may be used for malicious intent.
Examples:
http://hal-pc.org/~hoppy/tom/survey/
http://www.geocities.com/Area51/Corridor/9956/wam.html
http://www.billyworld.com/blackbook/blackbook.html
Personals
Sites that contain personal advertisements, including information about mail-order brides, dating services, escort services, or pen pals.
Examples:
http://girl.vu/
http://www.match.com/
Pornography
Sites that contain material that are intended to be sexually arousing or erotic. This includes photos, animation, cartoons, and stories. This also includes child pornography.
Examples:
http://www.clublove.com/
http://www.porno.com/
Profanity
Sites that contain crude, vulgar, or obscene language or gestures. Words used in a context that the Merriam-Webster Dictionary defines as "considered vulgar" or "considered obscene". Sites that include excessive use of letter substitution, such as "f@ck, sh*t, @ss, P*Ss" are still considered to fit into the Profanity category.
Examples:
http://www.krug.org/unit/scripts/dogs.html
http://www.theonion.com/archive/archive_kornfeld.html
Recreation/Entertainment
Sites that contain updated information about various recreation and entertainment events such as movie listings, theater and concert schedules, or local entertainment.
Examples:
http://www.thestranger.com/current/calendar_toc.html
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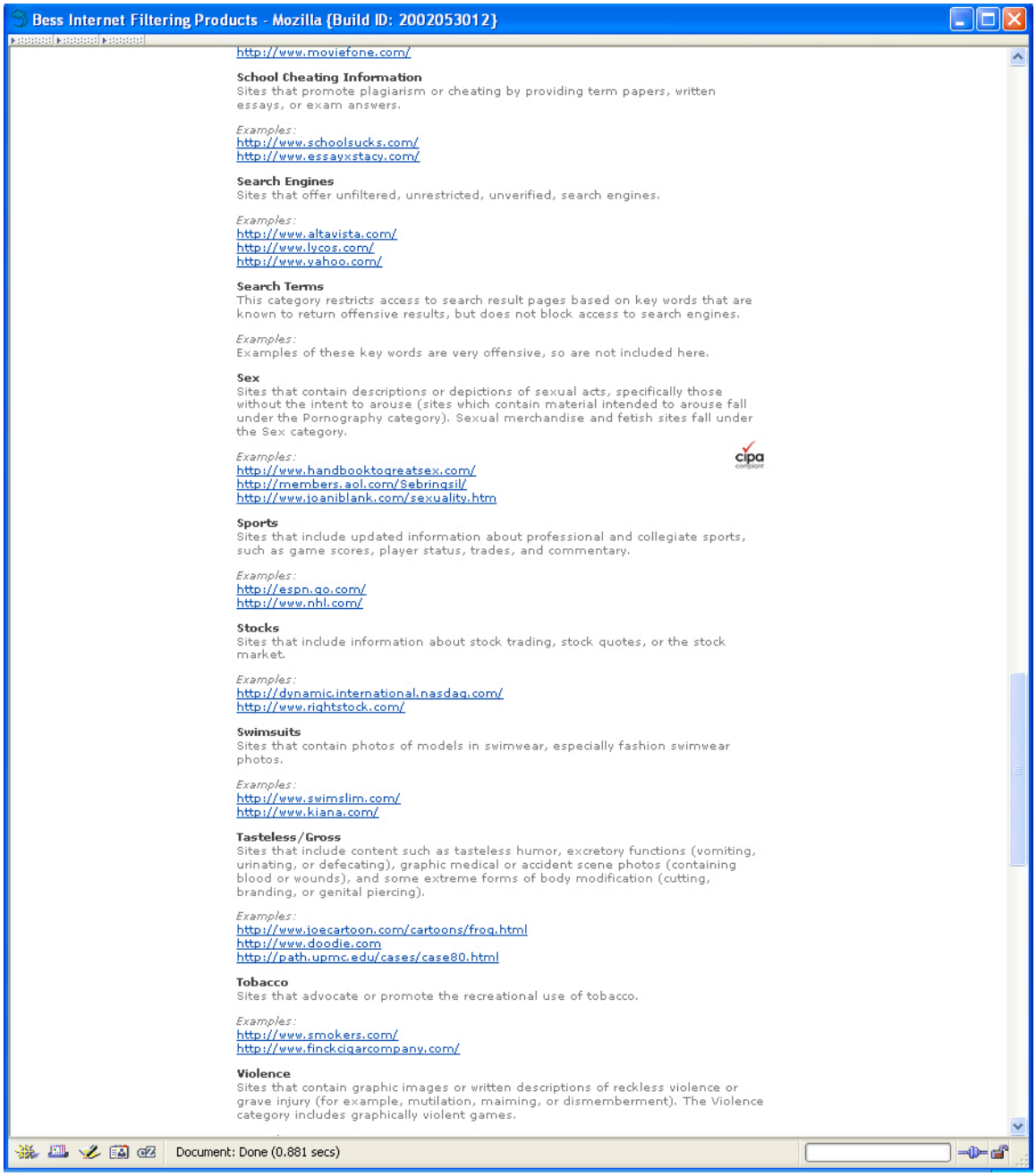
Bess Internet Filtering Products - Mozilla {Build ID: 2002053012}
http://www.moviefone.com/
School Cheating Information
Sites that promote plagiarism or cheating by providing term papers, written essays, or exam answers.
Examples:
http://www.schoolsucks.com/
http://www.essayxstacy.com/
Search Engines
Sites that offer unfiltered, unrestricted, unverified, search engines.
Examples:
http://www.altavista.com/
http://www.lycos.com/
http://www.yahoo.com/
Search Terms
This category restricts access to search result pages based on key words that are known to return offensive results, but does not block access to search engines.
Examples:
Examples of these key words are very offensive, so are not included here.
Sex
Sites that contain descriptions or depictions of sexual acts, specifically those without the intent to arouse (sites which contain material intended to arouse fall under the Pornography category). Sexual merchandise and fetish sites fall under the Sex category.
Examples:
http://www.handbooktogreatsex.com/
http://members.aol.com/Sebringsil/
http://www.joaniblank.com/sexuality.htm
Sports
Sites that include updated information about professional and collegiate sports, such as game scores, player status, trades, and commentary.
Examples:
http://espn.go.com/
http://www.nhl.com/
Stocks
Sites that include information about stock trading, stock quotes, or the stock market.
Examples:
http://dynamic.international.nasdaq.com/
http://www.rightstock.com/
Swimsuits
Sites that contain photos of models in swimwear, especially fashion swimwear photos.
Examples:
http://www.swimslim.com/
http://www.kiana.com/
Tasteless/Gross
Sites that include content such as tasteless humor, excretory functions (vomiting, urinating, or defecating), graphic medical or accident scene photos (containing blood or wounds), and some extreme forms of body modification (cutting, branding, or genital piercing).
Examples:
http://www.joecartoon.com/cartoons/frog.html
http://www.doodie.com
http://path.upmc.edu/cases/case80.html
Tobacco
Sites that advocate or promote the recreational use of tobacco.
Examples:
http://www.smokers.com/
http://www.finckcigarcompany.com/
Violence
Sites that contain graphic images or written descriptions of reckless violence or grave injury (for example, mutilation, maiming, or dismemberment). The Violence category includes graphically violent games.
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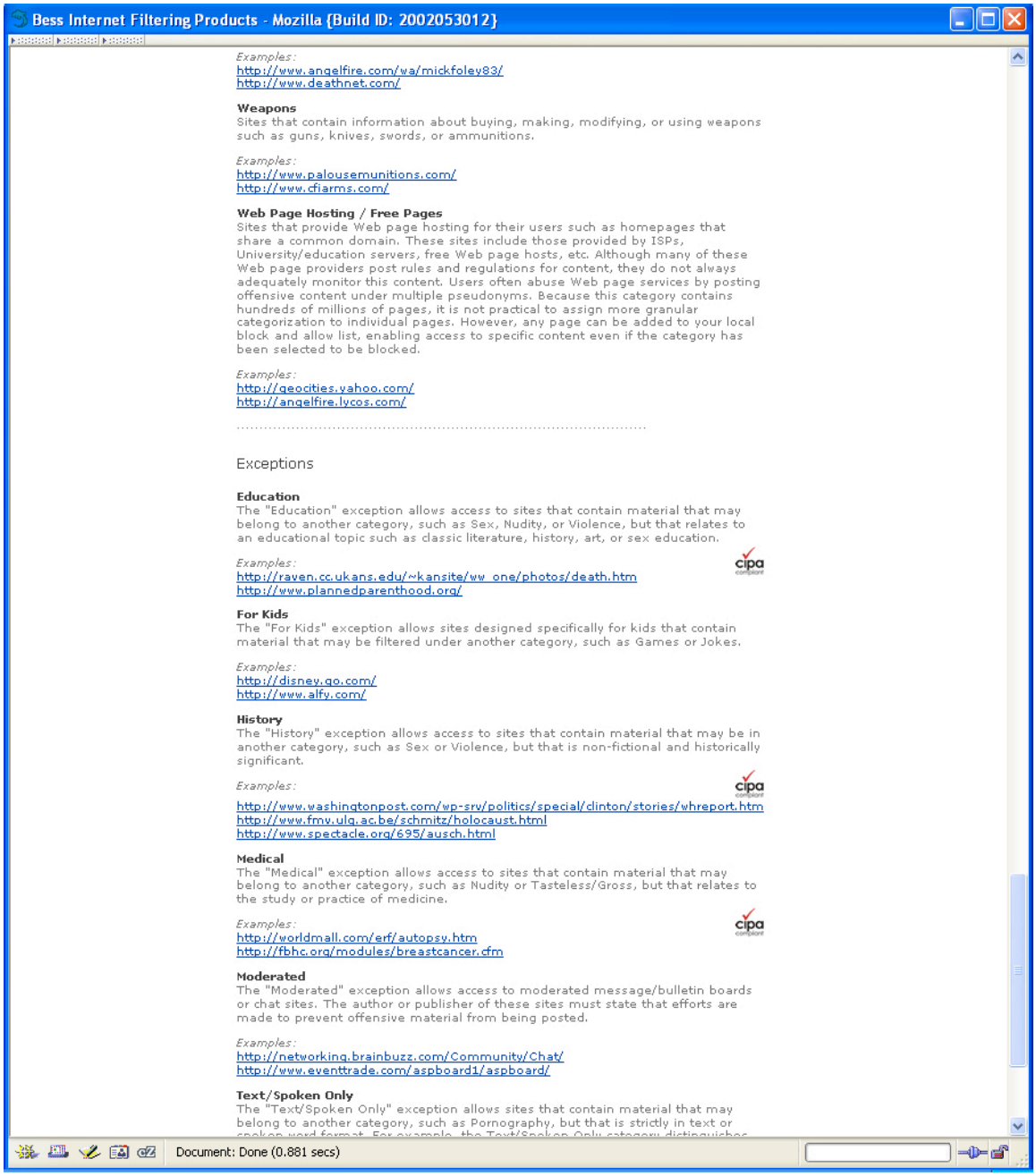
Bess Internet Filtering Products - Mozilla {Build ID: 2002053012}
Examples:
http://www.angelfire.com/wa/mickfoley83/
http://www.deathnet.com/
Weapons
Sites that contain information about buying, making, modifying, or using weapons such as guns, knives, swords, or ammunitions.
Examples:
http://www.palousemunitions.com/
http://www.cfiarms.com/
Web Page Hosting / Free Pages
Sites that provide Web page hosting for their users such as homepages that share a common domain. These sites include those provided by ISPs, University/education servers, free Web page hosts, etc. Although many of these Web page providers post rules and regulations for content, they do not always adequately monitor this content. Users often abuse Web page services by posting offensive content under multiple pseudonyms. Because this category contains hundreds of millions of pages, it is not practical to assign more granular categorization to individual pages. However, any page can be added to your local block and allow list, enabling access to specific content even if the category has been selected to be blocked.
Examples:
http://geocities.yahoo.com/
http://angelfire.lycos.com/
Exceptions
Education
The "Education" exception allows access to sites that contain material that may belong to another category, such as Sex, Nudity, or Violence, but that relates to an educational topic such as classic literature, history, art, or sex education.
Examples:
http://raven.cc.ukans.edu/~kansite/ww_one/photos/death.htm
http://www.plannedparenthood.org/
For Kids
The "For Kids" exception allows sites designed specifically for kids that contain material that may be filtered under another category, such as Games or Jokes.
Examples:
http://disney.go.com/
http://www.alfy.com/
History
The "History" exception allows access to sites that contain material that may be in another category, such as Sex or Violence, but that is non-fictional and historically significant.
Examples:
http://www.washingtonpost.com/wp-srv/politics/special/clinton/stories/whreport.htm
http://www.fmv.ulg.ac.be/schmitz/holocaust.html
http://www.spectacle.org/695/ausch.html
Medical
The "Medical" exception allows access to sites that contain material that may belong to another category, such as Nudity or Tasteless/Gross, but that relates to the study or practice of medicine.
Examples:
http://worldmall.com/erf/autopsy.htm
http://fbhc.org/modules/breastcancer.cfm
Moderated
The "Moderated" exception allows access to moderated message/bulletin boards or chat sites. The author or publisher of these sites must state that efforts are made to prevent offensive material from being posted.
Examples:
http://networking.brainbuzz.com/Community/Chat/
http://www.eventtrade.com/aspboard1/aspboard/
Text/Spoken Only
The "Text/Spoken Only" exception allows sites that contain material that may belong to another category, such as Pornography, but that is strictly in text or
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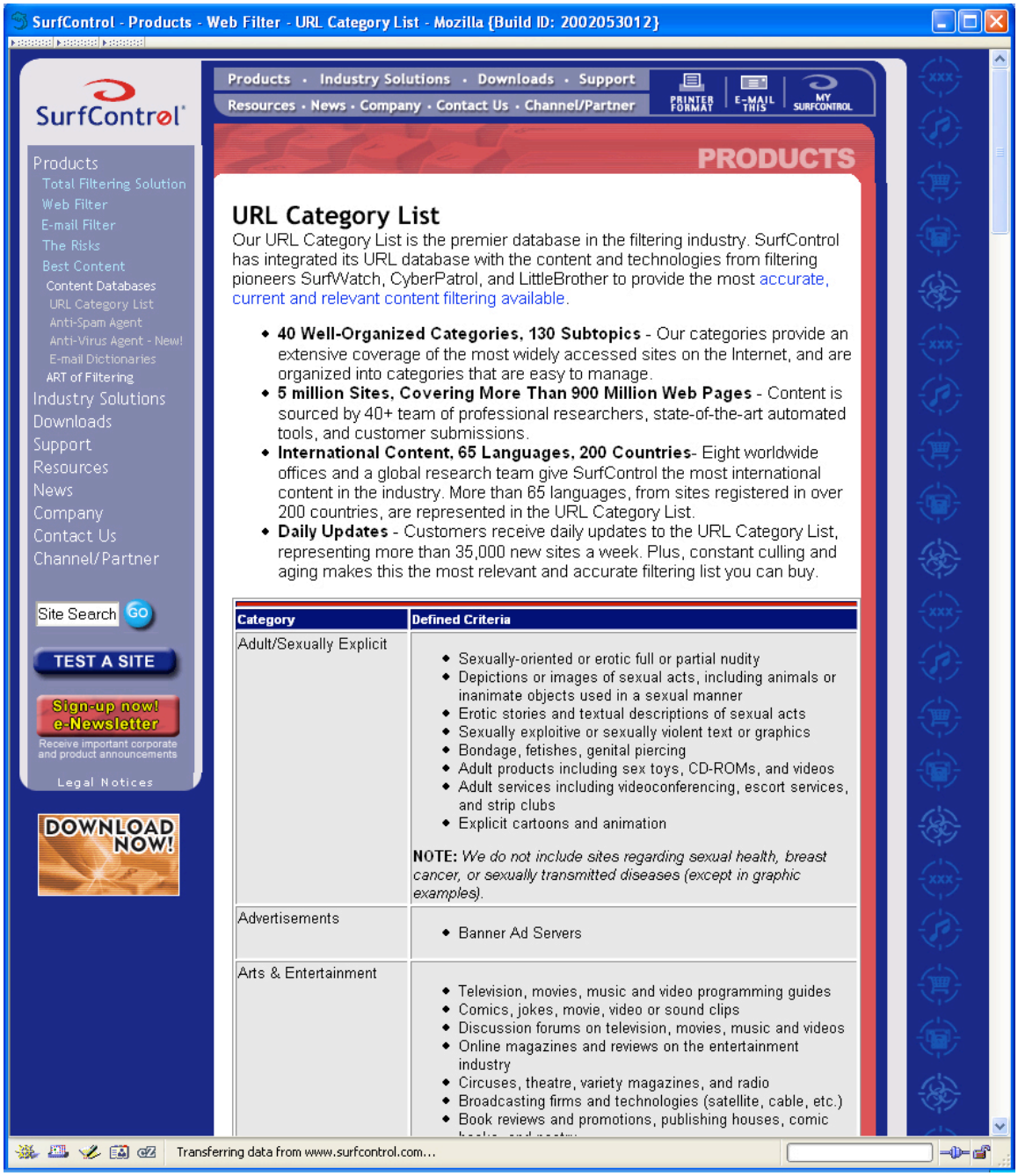
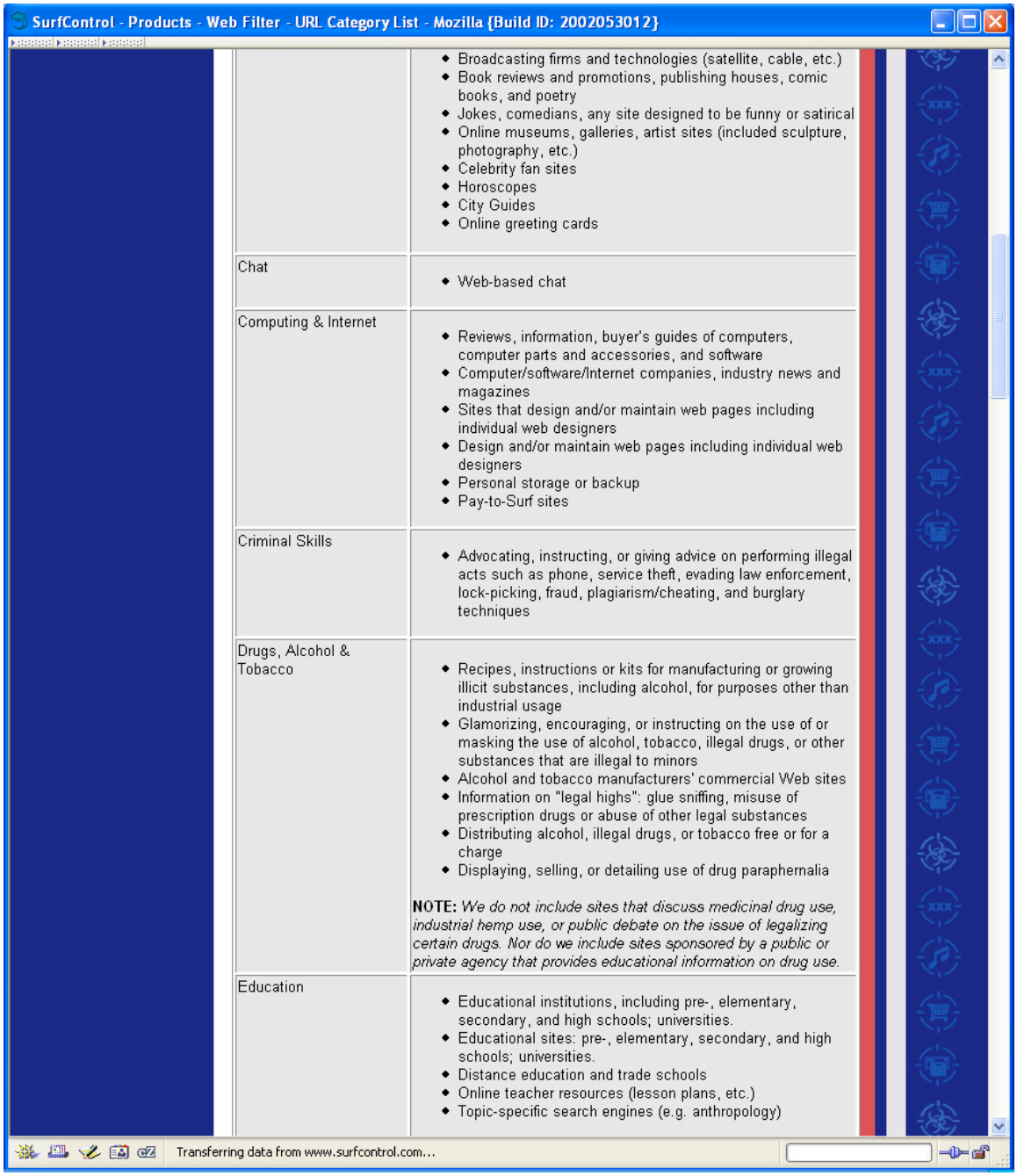
Bess Internet Filtering Products - Mozilla {Build ID: 2002053012}
spoken word format. For example, the Text/Spoken Only category distinguishes written erotica from graphic pornography sites.
Examples:
http://at.nifty.org/nifty/
http://www.thestarrreport.org/ken_starr/index.html
http://www.amazontrails.com/xena/theconquerorstouch.htm
N2H2 suggested categories for basic Children's Internet Protection Act compliance. Sex category optional for workstations used only by adults. For more information on CIPA, please visit www.filteringinfo.org
SITE MAP N2H2 WORLDWIDE PRIVACY POLICY CONTACT US REQUEST INFO
COPYRIGHT © 2002 N2H2, INC. ALL RIGHTS RESERVED
http://www.filteringinfo.org/

SurfControl Blocking Codes

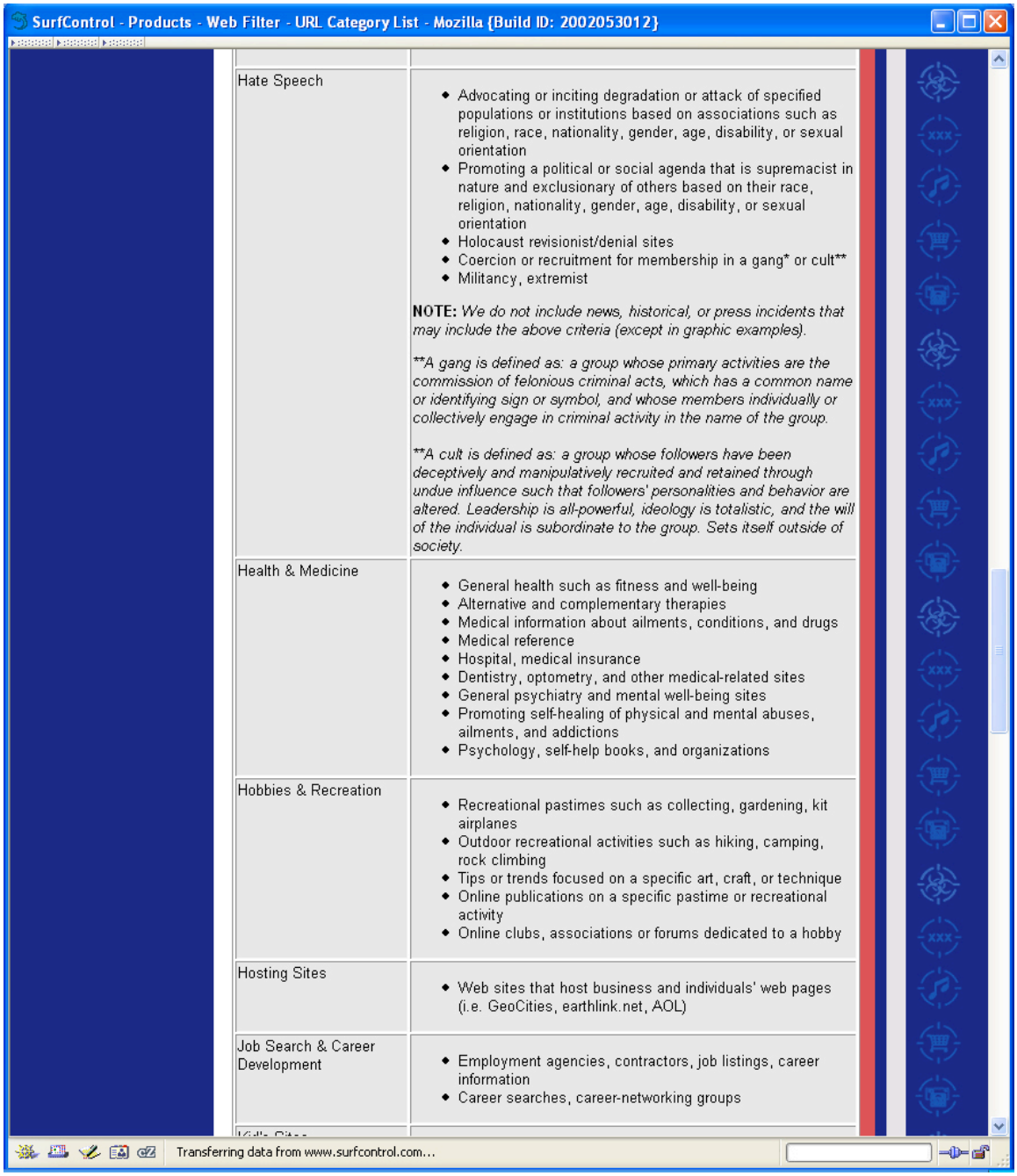
SurfControl's descriptions of their blocking product's blocking codes appear below and at http://www.surfcontrol.com/products/content/internet_databases/url_category_list/default.aspx





	• Broadcasting firms and technologies (satellite, cable, etc.) • Book reviews and promotions, publishing houses, comic books, and poetry • Jokes, comedians, any site designed to be funny or satirical • Online museums, galleries, artist sites (included sculpture, photography, etc.) • Celebrity fan sites • Horoscopes • City Guides • Online greeting cards
Chat	• Web-based chat
Computing & Internet	• Reviews, information, buyer's guides of computers, computer parts and accessories, and software • Computer/software/Internet companies, industry news and magazines • Sites that design and/or maintain web pages including individual web designers • Design and/or maintain web pages including individual web designers • Personal storage or backup • Pay-to-Surf sites
Criminal Skills	• Advocating, instructing, or giving advice on performing illegal acts such as phone, service theft, evading law enforcement, lock-picking, fraud, plagiarism/cheating, and burglary techniques
Drugs, Alcohol & Tobacco	• Recipes, instructions or kits for manufacturing or growing illicit substances, including alcohol, for purposes other than industrial usage • Glamorizing, encouraging, or instructing on the use of or masking the use of alcohol, tobacco, illegal drugs, or other substances that are illegal to minors • Alcohol and tobacco manufacturers' commercial Web sites • Information on "legal highs": glue sniffing, misuse of prescription drugs or abuse of other legal substances • Distributing alcohol, illegal drugs, or tobacco free or for a charge • Displaying, selling, or detailing use of drug paraphernalia **NOTE:** *We do not include sites that discuss medicinal drug use, industrial hemp use, or public debate on the issue of legalizing certain drugs. Nor do we include sites sponsored by a public or private agency that provides educational information on drug use.*
Education	• Educational institutions, including pre-, elementary, secondary, and high schools; universities. • Educational sites: pre-, elementary, secondary, and high schools; universities. • Distance education and trade schools • Online teacher resources (lesson plans, etc.) • Topic-specific search engines (e.g. anthropology)

Finance & Investment	• Stock quotes, stock tickers, and fund rates • Online stock or equity trading • Investing advice or contacts for trading securities • Money management/investment services or firm • General finances and companies that advise thereof • Accountancy, actuaries, banks, mortgages, and general insurance companies
Food & Drink	• Recipes, cooking instruction and tips, food products, and wine advisors • Restaurants, cafes, eateries, pubs, and bars • Food/drink magazines, reviews
Gambling	• Online gambling or lottery web sites that invite the use of real money • Information or advice for placing wagers, participating in lotteries, or gambling real money, or running numbers • Virtual casinos and offshore gambling ventures • Virtual sports leagues and sports picks and betting pools
Games	• Game playing or downloading; game hosting or contest hosting • Tips and advice on games or obtaining cheat codes ("cheatz") • Journals and magazines dedicated to game playing
Glamour & Intimate Apparel	• Lingerie, negligee or swimwear modeling • Model fan pages; fitness models/sports celebrities • Fashion or glamour magazines online; clothing catalogs • Beauty and cosmetics • Modeling information and agencies
Government & Politics	• Government services such as taxation, armed forces, customs bureaus, emergency services. • Local government sites • Political debate, canvassing, election information and results • Local, national, and international political sites
Hacking	• Promotion, instruction, or advice on the questionable or illegal use of equipment and/or software for purpose of hacking passwords, creating viruses, gaining access to other computers and/or computerized communication systems. • Sites that provide work-arounds for our filtering software • Cracked software • Pirated software download sites • Pirated multimedia download sites
Hate Speech	• Advocating or inciting degradation or attack of specified


SurfControl - Products - Web Filter - URL Category List - Mozilla {Build ID: 2002053012}
Hate Speech
Advocating or inciting degradation or attack of specified populations or institutions based on associations such as religion, race, nationality, gender, age, disability, or sexual orientation
Promoting a political or social agenda that is supremacist in nature and exclusionary of others based on their race, religion, nationality, gender, age, disability, or sexual orientation
Holocaust revisionist/denial sites
Coercion or recruitment for membership in a gang* or cult**
Militancy, extremist
NOTE: We do not include news, historical, or press incidents that may include the above criteria (except in graphic examples).
**A gang is defined as: a group whose primary activities are the commission of felonious criminal acts, which has a common name or identifying sign or symbol, and whose members individually or collectively engage in criminal activity in the name of the group.
**A cult is defined as: a group whose followers have been deceptively and manipulatively recruited and retained through undue influence such that followers' personalities and behavior are altered. Leadership is all-powerful, ideology is totalistic, and the will of the individual is subordinate to the group. Sets itself outside of society.
Health & Medicine
General health such as fitness and well-being
Alternative and complementary therapies
Medical information about ailments, conditions, and drugs
Medical reference
Hospital, medical insurance
Dentistry, optometry, and other medical-related sites
General psychiatry and mental well-being sites
Promoting self-healing of physical and mental abuses, ailments, and addictions
Psychology, self-help books, and organizations
Hobbies & Recreation
Recreational pastimes such as collecting, gardening, kit airplanes
Outdoor recreational activities such as hiking, camping, rock climbing
Tips or trends focused on a specific art, craft, or technique
Online publications on a specific pastime or recreational activity
Online clubs, associations or forums dedicated to a hobby
Hosting Sites
Web sites that host business and individuals' web pages (i.e. GeoCities, earthlink.net, AOL)
Job Search & Career Development
Employment agencies, contractors, job listings, career information
Career searches, career-networking groups
Transferring data from www.surfcontrol.com...

SurfControl - Products - Web Filter - URL Category List - Mozilla {Build ID: 2002053012}
Kid's Sites
Child-centered sites and sites published by children
Lifestyle & Culture
Homelife and family-related topics, including parenting tips, gay/lesbian/bisexual (non-pornographic sites), weddings, births, and funerals
Foreign cultures, socio-cultural information
Motor Vehicles
Car reviews, vehicle purchasing or sales tips, parts catalogs
Auto trading, photos, discussion of vehicles including motorcycles, boats, cars, trucks and RVs
Journals and magazines on vehicle modification, repair, and customization
Online automotive enthusiast clubs
News
Newspapers online
Headline news sites, newswire services, and personalized news services
Weather sites
Personals and Dating
Singles listings, matchmaking and dating services
Advice for dating or relationships; romance tips and suggestions
Photo Searches
Sites that provide resources for photo and image searches
Real Estate
Home, apartment, and land listings
Rental or relocation services
Tips on buying or selling a home
Real estate agents
Home improvement
Reference
Personal, professional, or educational reference
Online dictionaries, maps, and language translation sites
Census, almanacs, and library catalogues
Topic-specific search engines
Religion
Churches, synagogues, and other houses of worship
Any faith or religious beliefs, including non-traditional religions such as Wicca and witchcraft
Remote Proxies
Remote proxies or anonymous surfing
Peer-to-peer sharing
Sex Education
Pictures or text advocating the proper use of contraceptives, including condom use, the correct way to wear a condom and how to put a condom in place
Sites relating to discussion about the use of the Pill, IUDs
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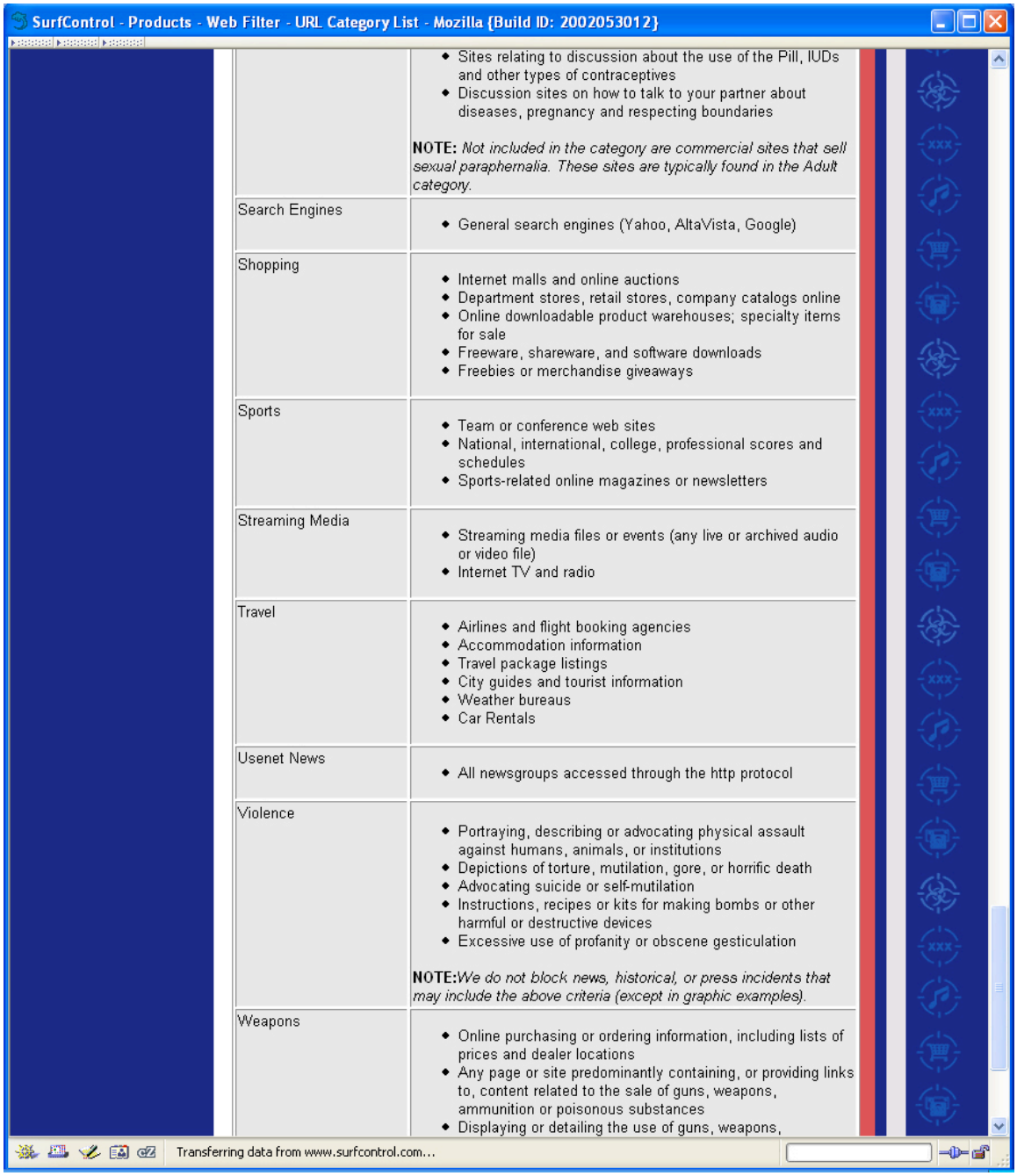
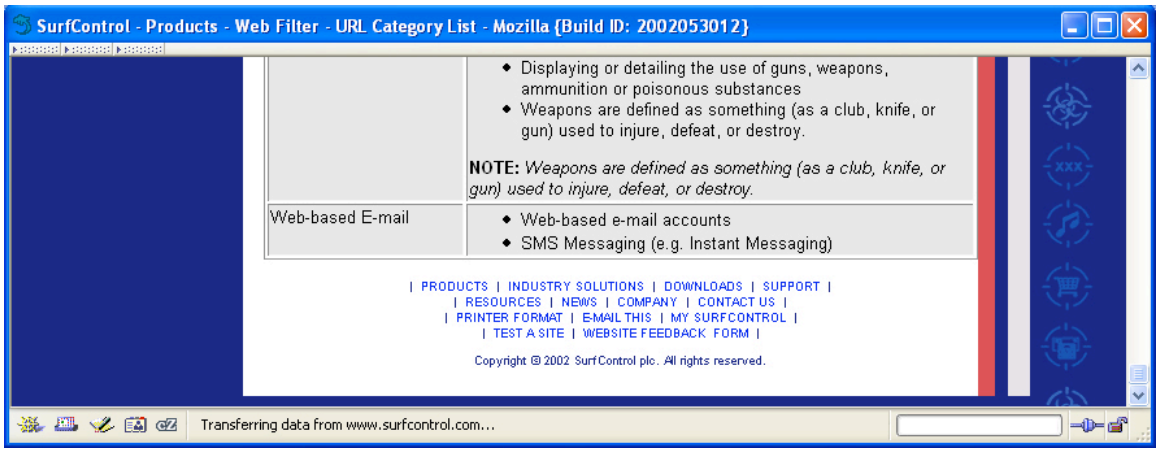


	• Sites relating to discussion about the use of the Pill, IUDs and other types of contraceptives • Discussion sites on how to talk to your partner about diseases, pregnancy and respecting boundaries **NOTE:** *Not included in the category are commercial sites that sell sexual paraphernalia. These sites are typically found in the Adult category.*
Search Engines	• General search engines (Yahoo, AltaVista, Google)
Shopping	• Internet malls and online auctions • Department stores, retail stores, company catalogs online • Online downloadable product warehouses; specialty items for sale • Freeware, shareware, and software downloads • Freebies or merchandise giveaways
Sports	• Team or conference web sites • National, international, college, professional scores and schedules • Sports-related online magazines or newsletters
Streaming Media	• Streaming media files or events (any live or archived audio or video file) • Internet TV and radio
Travel	• Airlines and flight booking agencies • Accommodation information • Travel package listings • City guides and tourist information • Weather bureaus • Car Rentals
Usenet News	• All newsgroups accessed through the http protocol
Violence	• Portraying, describing or advocating physical assault against humans, animals, or institutions • Depictions of torture, mutilation, gore, or horrific death • Advocating suicide or self-mutilation • Instructions, recipes or kits for making bombs or other harmful or destructive devices • Excessive use of profanity or obscene gesticulation **NOTE:***We do not block news, historical, or press incidents that may include the above criteria (except in graphic examples).*
Weapons	• Online purchasing or ordering information, including lists of prices and dealer locations • Any page or site predominantly containing, or providing links to, content related to the sale of guns, weapons, ammunition or poisonous substances • Displaying or detailing the use of guns, weapons,


SurfControl - Products - Web Filter - URL Category List - Mozilla {Build ID: 2002053012}
Displaying or detailing the use of guns, weapons, ammunition or poisonous substances
Weapons are defined as something (as a club, knife, or gun) used to injure, defeat, or destroy.
NOTE: Weapons are defined as something (as a club, knife, or gun) used to injure, defeat, or destroy.
Web-based E-mail
Web-based e-mail accounts
SMS Messaging (e.g. Instant Messaging)
| PRODUCTS | INDUSTRY SOLUTIONS | DOWNLOADS | SUPPORT | | RESOURCES | NEWS | COMPANY | CONTACT US | | PRINTER FORMAT | E-MAIL THIS | MY SURFCONTROL | | TEST A SITE | WEBSITE FEEDBACK FORM |
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Transferring data from www.surfcontrol.com...

Section 10 Appendix C

School District Internet Use Standards

Examples of public school Internet use policies:

- Boston, MA
  http://boston.k12.ma.us/textonly/teach/aup.asp
- Cambridge, MA
  http://www.cps.ci.cambridge.ma.us/pubinfo/newfiles/accept.pdf
- Charlotte-Mecklenburg, NC
  http://168.190.200.88/departments/technology/aup.asp
- Wake County, NC
  http://www.wcpss.net/Technology/pdf/6446.pdf
- San Francisco, CA
  http://www.sfusd.edu/dept/ist/policies/InternetPol.htm
- Los Angeles, CA
  http://www.lausd.k12.ca.us/lausd/lausdnet/aup.html

Section
11 Appendix D

Examples of Inappropriate Blocking

N2H2 Bess Inappropriate Blocking

Coming soon.

SurfControl Inappropriate Blocking

Coming soon.

Section
12 Appendix E

Blocking Software Company Responses to Study

N2H2 Response to Study

Coming soon.

SurfControl Response to Study

Coming soon.

Section 13 Bibliography

[1] Boston Latin School. “Brief History of the Boston Latin School.” August 28, 2002. http://bls.org/bls_history/History_of_bls.htm

[2] Burke, Brian, Christian A. Christiansen, and Charles Kolodgy. “Worldwide Secure Content Management Software Market Forecast and Analysis, 2002-2006: Vendor Views.” June 18, 2002. http://www.surfcontrol.com/general/articles/June02IDC.pdf

[3] California Department of Education. “Content Standards for California Public Schools, Kindergarten Through Grade 12.” June 27, 2002. http://www.cde.ca.gov/standards

[4] Cyveillance. “Internet Exceed 2 Billion Pages: Cyveillance Study Projects Internet Will Double in Size by Early 2001.” July 10, 2000. http://www.cyveillance.com/web/newsroom/releases/2000/2000-07-10.htm

[5] Finkelstein, Seth.”BESS’s Secret LOOPHOLE (censorware vs. privacy & anonymity).” November 2002. http://sethf.com/anticensorware/bess/loophole.php

[6] Finkelstein, Seth and Lee Tien. “Blacklisting Bytes.” March 6, 2001. http://www.eff.org/Censorship/Censorware/20010306_eff_nrc_paper1.html

[7] Google Inc. “Google Inc. Fact Sheet.” February 23, 2002. http://www.google.com/press/facts.html

[8] Haselton, Bennett. “Study of Average Error Rates for Censorware Programs.” October 23, 2000. http://www.peacefire.org/error-rates/

[9] Heins, Marjorie and Christina Cho. “Internet Filters: A Public Policy Report.” New York, NY: Free Expression Policy Project & National Coalition Against Censorship, Fall 2001. http://www.fepproject.org/policyreports/filteringreport.html

[10] Heins, Marjorie and Christina Cho. “Media Literacy: An Alternative to Censorship.” New York, NY: Free Expression Policy Project, 2002. http://www.fepproject.org/policyreports/medialiteracyfull.html

[11] Internet Content Rating Assocation. “ICRA Label and Meta Data Generator.” 2002. http://www.icra.org/_en/label/extended/

[12] Internet Content Rating Assocation. “ICRA Members.” 2002. http://www.icra.org/_en/community/members/

[13] Kearney, Pat. “Access Denied: Internet Filtering Brings Censorship to Seattle Public Schools.” The Stranger. May 25 – May 31, 2000. http://www.thestranger.com/2000-05-25/city2.html

[14] Massachusetts Department of Education. “Current Curriculum Frameworks.” August 8, 2002 http://www.doe.mass.edu/frameworks/current.html

[15] National Center for Education Statistics. “Digest of Education Statistics, 2001.” 2001. http://nces.ed.gov//pubs2002/digest2001/

[16] North Carolina Department of Public Instruction. “North Carolina Standard Course of Study.” August 8, 2002. http://www.ncpublicschools.org/curriculum

[17] Online Policy Group, "Why Blocking Technology Can't Work," September 27, 2002. http://www.onlinepolicy.org/research/blockcantwork.shtml

[18] Pew Internet and American Life Project. “The Digital Disconnect – The Widening Gap Between Internet-Savvy Students and Their Schools.” August 14, 2002. http://www.pewinternet.org/reports/pdfs/PIP_Schools_Internet_Report.pdf

[19] “See No Evil: How Internet Filters Affect the Search for Online Health Information.” The Henry J. Kaiser Family Foundation. December 2002. http://www.kff.org/content/2002/20021210a/

[20] Thornburgh, Dick (Ed) and Herbert S. Lin (Ed) “Youth, Pornography, and the Internet.” Washington D.C.: National Academy Press, 2002 http://www.nap.edu/books/0309082749/html/

[21] Tien, Lee. “The ‘Vexing’ Question of the State’s Interest in Preventing Minors’ Access to ‘Harmful to Minors’ Material.” Electronic Frontier Foundation. March 6, 2001. http://www.eff.org/Censorship/Censorware/20010306_eff_nrc_paper2.html

[22] U.S. Congress. “Child Online Protection Act.” H.R. 3783 of October 5, 1998. http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=105_cong_bills&docid=f:h3783rh.txt

[23] U.S. Congress. “Children’s Internet Protection Act” (Pub. L. 106-554). http://www.fcc.gov/wcb/universal_service/chipact.doc

[24] U.S. Congress. “Communications Decency Act.” http://usinfo.state.gov/usa/infousa/laws/majorlaw/s652titl.htm

[25] U.S. Department of Justice. “2465 Instructions on Final Injunction on Prosecutions under the Communications Decency Act.” October 1997. http://www.usdoj.gov/usao/eousa/foia_reading_room/usam/title9/crm02465.htm

[26] U.S. District Court for the Eastern District of Pennsylvania. “ACLU v. Reno (II).” November 20, 1998. http://www.paed.uscourts.gov/documents/opinions/98D1170P.HTM

[27] U.S. District Court for the Eastern District of Pennsylvania. “American Library Association v. United States and Multnomah County Public Library v. United States.” May 31, 2002. http://www.paed.uscourts.gov/documents/opinions/02D0415P.HTM

[28] U.S. Supreme Court. “Reno v. ACLU.” Legal Information Institute. June 26, 1997. http://supct.law.cornell.edu/supct/html/96-511.ZO.html

[29] “Urban and Rural Population: 1900 to 1990.” US Census Bureau. October 1995. http://www.census.gov/population/censusdata/urpop0090.txt

[30] VeriTest (formerly ETesting Labs). “U.S. Department of Justice: Updated Web Content Filtering Software Comparison.” October 2001. http://www.veritest.com/clients/reports/usdoj/usdoj.pdf

[31] Wired News. “The Army is Watching Your Kid.” http://www.wired.com/news/print/0,1294,41476,00.html

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