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The Internet and Education:
Findings of the Pew Internet & American Life Project

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Summary of Findings

The Internet has become an increasingly important feature of the learning environment for teenagers. Research by the Pew Internet & American Life Project shows that teens use the Internet as an essential study aid outside the classroom and that the Internet increasingly has a place inside the classroom.

Here are some of the significant findings from a survey of 754 youths ages 12-17 conducted last November and December:

- 94% of youth ages 12-17 who have Internet access say they use the Internet for school research and 78% say they believe the Internet helps them with schoolwork.
- 71% of online teens say that they used the Internet as the major source for their most recent major school project or report.
- 41% of online teens **say they use email and instant messaging to contact teachers or classmates about schoolwork.**
- 34% of online teens have downloaded an online study aid.
- 18% of online teens say they know of someone who has used the Internet to cheat on a paper or test.
- 58% of online teens report using Web sites that had been set up specifically for their school or for a particular class.
- 17% of online teens have created a Web page for a school project.

Here are some of the key findings from a survey of 754 of the parents of those youths:

- 87% of parents of online teens believe that the Internet helps students with their schoolwork and 93% believe the Internet helps students learn new things.
- 55% say the Internet has been a good thing for their children; only 6% say it has been a bad thing; 38% say the Internet has no effect one way or the other on their children.
- **55% say that it is essential for today's children to learn how to use the Internet in order to be successful and another 40% believe it is important.**
- 28% of these parents have used email to communicate with their children's teachers.

Other education-related findings in the survey work of the Pew Internet Project:

- 5% of adult Internet users have taken a class online for college credit. That amounts to more than 5 million people.
- 53% of adult Internet users have gone online to do research for school or job training. On any given day 8% of adult Internet users are online doing research for school or job training.
- 52% of adult Internet users have done job-related research online. On a typical day, 16% of Internet users are online doing job-related research. About half of Internet users (more than 50 million people) have access to the Internet at work.

Main Findings about the Internet and Education

Background

There has been an aggressive national campaign to bring computers and the Internet into schools since 1996. The Telecommunications Act passed that year created the E-Rate program, which provided discounts of 20%-to-90% to schools (depending upon the number of poor children in a district) to purchase Internet access for the school or library. The most recent federal research finds that more than 98% of American public schools have some kind of Internet access for students. Some 77% of instructional classrooms have Internet connections, but the number drops to 60 percent for schools with the highest concentrations of poverty.[1]

School-related use of the Internet	
The percent of online teens who have ever…	
Used the Internet for school research	94%
Used the Internet as the major source for their most recent school project	71%
Used a Web site set up by school or a class	58%
Downloaded a study aid	34%
Created a Web page for a school project	17%

Source: Pew Internet & American Life Project Teens and Parents Survey, Nov.-Dec. 2000. Margin of error is ±4%.

Of course, access does not reflect actual use. In a survey of 754 teens last November-December, we found that 73% of youth ages 12-17 use the Internet. This is a high figure, but it is important to compare it to the fact that there is access to the Internet for virtually all teenagers at their schools. A significant number of teens should be able to go online at school, but do not or cannot do so. About two-thirds (64%) of the wired teens we interviewed say they have gone online at one time or another from school. The vast majority report their primary access to the Internet is at home and that is the place they most frequently go online.

About 11% of these wired teenagers say their primary access to the Internet is at school. Our survey suggests that school is often the place where those who are less privileged have their primary access to the Internet. That includes of children of single parents and those from low-income families.

Even though computers are available at schools, there can be significant practical difficulties in using them and gaining Internet access. One science teacher from a big city vocational school told the Pew Internet Project she only uses the Internet in her classroom every month or two because it is hard to schedule time in the computer lab at her school. The logistics often get in the way of incorporating the Internet into her classroom work, she said.[2]

The Internet as teaching tool

Most teenagers say the Internet's ability to help them with their schoolwork and to help them learn new things is one of its best features. This potential role as educational tool is often the primary reasons why families get Internet access. Three-quarters of online teens (78%) say the Internet helps them do their schoolwork—47% say it helps them a lot.

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[1] Cattagni, Anne, Farris, Elizabeth, and Westat, *Statistics in Brief,* "Internet Access in U.S. Public Schools and Classrooms: 1994-2000," National Center for Education Statistics, May 2001

[2] Personal communication to Amanda Lenhart, August 2001

Parents agree with their online children that Internet helps with learning. Fully 93% believe that the Internet helps children learn new things. Eighty-seven percent of these parents say the Internet helps children with their schoolwork. And 95% of these parents say it is important for children to learn about the Internet in order to be a success later in life; 55% say it is essential. Teachers agree: 96% of teachers surveyed by SBC say that knowledge of and use of the Internet is an essential aspect of communication today.[3]

Online study aids
The Internet has also revolutionized many time-honored short cuts to completing assignments. For a fee, interested readers can download branded study aids from the Internet, or search for free Web pages with the content they need. One-third (34%) of all online teens have downloaded online study aids. Older teens—those ages 15 through 17—are more likely to have downloaded study aids from the Internet than younger teens (39%, compared to 27%). Older girls and youth who go online every day are among the heaviest users, with 41% of each group saying that they have downloaded Cliff's Notes, Monarch Notes or other study guides from the Internet.

Research for papers and projects—from Dewey Decimal to dot-com
For many teens, the Internet has replaced the library as the primary tool for doing research for significant projects. Almost all online teens use the Internet to do research for school—94% report using the Internet for this purpose. "I find the Internet most useful when I need help for school," maintained a 15-year-old boy who answered questions in an online discussion group run by the research firm Greenfield Online for the Pew Internet Project. "Without the Internet you need to go to the library and walk around looking for books. In today's world you can just go home and get into the Internet and type in your search term. The results are endless. There is so much information that you have to ignore a lot of it."

When asked to think about the last big report they wrote for school, 71% of online teens reported relying mostly on Internet sources for their research. Another quarter (24%) reported using mostly library sources, and 4% said they used both equally. Older teens were slightly more likely than younger ones to report relying on Internet sources; 74% of those ages 15-17 relied on the Internet for their most recent project, compared to 68% of those ages 12-14. And three-quarters of youth who go online every day used the Internet as their main source for their last school report, compared to 68% of youth who go online less often. Students cite the ease and speed of online research as their main reasons for relying on the Web instead of the library.

Instant Messaging as a homework helper
For instantaneous help with vexing homework, online teens at times turn to friends, classmates, and teachers via instant messages or email. Forty-one percent of online teens say they use those communication tools to contact teachers or classmates about schoolwork. "We talk about school [online] sometimes," noted a 17-year-old girl in a February online discussion group conducted for the Pew Internet Project by Greenfield Online. "If we need help on homework, it's great because you can get 3 or 4 people working on a really tough problem together." Close to half of online girls (47%) report email or instant messaging

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[3] SBC Communications Broadband Watch Report

classmates or teachers about schoolwork, as do 36% of online boys. Older teens are more likely to report consulting friends or teachers online about schoolwork. And a substantial majority of teens who go online daily (60%) report emailing or IM'ing others about homework.

Web sites about school or classes
Increasingly, America's wired schools are turning to the Web as an efficient way to disseminate information about the school, specific classes, and activities. Many are building class projects around the creation of Web sites. Fifty-eight percent of youth at one time or another have ever used Web sites set up by their school or classes. A 16-year-old girl from the Greenfield Online discussion group said: "My favorite Web sites are some of the ones for my child development class. They're really interesting."

Web sites as schoolwork
Teachers are also starting to incorporate the Web into their classroom work. Seventeen percent of all youth have created a Web page for a school project. Younger teens (12 to 14) are more likely to have done this than older teens—20% of teens ages 12 through 14 have ever made a Web site for a school assignment, compared to 15% of teens 15 to 17.

Net cheaters
The ease of gathering information on the Internet has a darker side. The simplicity of finding out things on the Web also makes it easy for students to cheat. Cutting and pasting text from a Web site and into a paper is effortless. So is wholesale copying or purchasing finished essays or reports. About a fifth of online youth (18%) say they know of someone who has used the Internet to cheat on a paper or test. While 9% of those who have been online for a year or less know someone who has cheated, 19% of those who have been online for 2 to 3 years and 28% of those who have been online for more than three years know people who have used the Net to cheat.

Using the Internet to cheat	
The percentage of online teens who know anyone who has used the Internet to cheat on a school paper or test:	
All teens	18%
Boys	21%
Girls	15%
Younger (12-14)	12%
Older (15-17)	23%
Internet experience	
A year or less	9%
2-3 years	19%
More than 3 years	28%

Source: Pew Internet & American Life Project Teens and Parents Survey, Nov.-Dec. 2000. Margin of error is ±4%.

Homework Help Web Sites

In light of the importance of the Internet to teens for homework and research, the Pew Internet & American Life Project examined a sampling of the most popular homework help Web sites. Between July 13 and August 3, 2001, the Project looked at 100 sites that labeled themselves "homework help sites." We found these sites by querying search engines like Google, Yahoo, and Lycos with the phrase "homework help."

What is a "homework help" site?
The sites we studied served a variety of purposes, from online tutoring to term papers written by other students. Homework help sites also range in price, in scope, and in the age group to which they cater.

Target Users
Almost every homework help site specifies what age group or grade level it is intended for. Most of the sites explored catered to middle school (grades 6-8) or high school (9-12) students. Thirty-three of all 100 sites were intended at least in part for use by college students, and twenty-eight of the 32 essay sites in this survey claimed they were created expressly for college students. The smallest number of sites are geared toward elementary school students.

Seven Types of Homework Help Sites

1. Aggregate or Portal Sites
These sites offer a collection of links to other sources of research or information. Links are usually organized by subject (i.e. English, Biology, American History), and vary in number from site to site. Research portals such as these have become increasingly common, collecting a number of reference materials at one convenient location. The best compilations have a variety of topics, a multitude of interesting links, and contain few or no broken hyperlinks. Some 37 of the sites we surveyed were collections of links.

Examples of aggregate and portal sites:
- Homework help at: http://www.slco.lib.ut.us/kidhelp.htm
- Martindale's - The Reference Desk at: http://www-sci.lib.uci.edu/HSG/Ref.html
- Homework help at About.com at: http://homeworkhelp.about.com/

2. Articles and Information Sites
While less common than the basic portals, 20 of the sites we examined offered their own articles or information. Rather than refer the user to another source for help, they use sample problems, book summaries, or encyclopedia-style articles to aid students.

Examples of articles and information sites:
- The Fact Monster Homework Center at: http://www.factmonster.com/homework/
- Academic Assistance Access at: http://www.tutoraid.org/

3. Essay Sites
Almost one-third of the sites surveyed in this project dealt with buying, selling, sharing, or downloading essays or term papers. Although it is clear that some sites would tempt a student to download a paper and claim it as his own, to avoid legal issues, nearly all of these sites have disclaimers. NoCheaters.com, a Web site that sells pre-written papers for $9.85 a page, maintains that its papers should be used as models only, stating, "NoCheaters.com does not service those who wish to cheat, copy, steal, or plagiarize." The site is at: http://www.nocheaters.com/custompapers.html.

Some essay databases, however, make little effort to hide their true aims. Cyber Essays (www.cyberessays.com) posts the following statement: "Cyber Essays is here to challenge the lazy teacher into helping her students and [giving] assignments from which the students can learn." As a counterpoint, services like TurnItIn.com (at http://www.turnitin.com/new.html) allow teachers to check a student's work against the thousand of essays and reports available online. And as teachers and the Web sites themselves warn, students who make use of such sites should know that their teachers can access the stock of essays as easily as the student.

Essay sites vary in price and in quality. While some sites offer free access to their stores of essays, some want cash in return. Essay prices ranged from $15 for a two-page paper on Romeo & Juliet to $79.95 for a custom-written, two-page college admissions essay. Most essay sites charge an average of $9 to $10 per page for generic essays and $15 to $20 per page for custom essays. Other essay sites offer subscription services for roughly $15 - $20 a month, and up to $150 yearly for pay library and/or information sites. However, some sites offer free access to their databases if a student either submits a paper, or adds the site's banner ad to his or her own Web page. (Our teen survey showed that 24% of online teens have built their own Web pages.)

Once a student gains access to a Web site's essays, he or she may discover that their quality leaves something to be desired. Blaine Vess, creator of Other People's Papers (www.oppapers.com), was cited in a recent Denver Post article as estimating that about 20% of the essays on oppapers.com would receive a grade of a D or an F.

Other examples of essay sites:
- AcaDemon at: http://www.academon.com/
- Essay Girl at: http://www.essaygirl.com

4. Ask-An-Expert Sites
Another common type of homework help site includes online tutoring services, and ask-an-expert services that enlist teachers or other volunteers to answer students' questions via chat or email or instant message. Many of the ask an expert sites are free, while the online tutoring Web sites tend to work on either fee-for-service or subscription-based models.

Examples of ask-an-expert sites:
- Ask KidsConnect at: http://www.ala.org/ICONN/AskKC.html
- Tutor Café at: http://www.tutorcafe.com/homepage/homepage.cfm?beanid=117876-36131376-1
- Pitsco's Ask an Expert at: http://www.askanexpert.com

5. Book notes and Summary Sites
Sometimes for free, but more often for a fee, student users can download branded study aids that offer synopses and readers guides, usually to literature. According to teens 12 to 17 that the project surveyed, 34% say they have downloaded online study aids.

Examples of book notes and summaries sites:
- Sparksnotes at: http://www.sparknotes.com/lit/.dir/

- Cliff's Notes at: http://www.cliffsnotes.com/
- Classic Notes at: http://www.classicnote.com/

6. Online Encyclopedia and Library Sites

Sites like Britannica and World Book offer subscriptions to full online encyclopedias as well as few articles for free, mainly meant as teasers to get users to sign up for the free trial period. Others are styled as online libraries, allowing users to read, take online notes and create bibliographies from digital copies of books. Many library sites also work on a subscription-based model.

Examples of online library or encyclopedia sites:
- Encyclopedia Britannica at: http://www.britannica.com/
- Questia at: http://www.questia.com/
- World Book Encyclopedia at: http://www.worldbook.com/

7. Tutoring Service Sites

A variety of offerings appear online. Some services provide immediate, interactive tutoring. For example, Herzog Interactive (http://herzoginteractive.com/) provides subscribers with a PC camera pack, two-way headset, and an electronic tablet. This gear comes free with each subscription to Herzog Interactive. Subscription rates are $185 per month or $1,665 per year.

Other sites offer clients/students what is essentially an online "day planner" for their tutoring sessions as well as access to tutors on various subjects. TutorCafe will connect members with tutors in their area using several search criteria including price per hour, and location. The site is: http://www.tutorcafe.com/

Quikktutor uses a proprietary system that creates a "virtual classroom" and matches student members with tutors who can conduct sessions with chat and white boards on the Web in real time. The membership price cost is $39.99 a month for up to 30 hours of tutoring a month. The site is: http://www.quikktutor.com/

Who creates homework help sites?
Private companies or organizations developed 61 of the sites studied in this survey. Of the remaining sites, individuals created about a third, and libraries established a few. While most sites, especially those created by private organizations, were highly polished and professional, a fair number of the homework help sites examined by the Pew Internet Project were amateur creations of teachers, parents, or students looking to help other students.

The great majority of the sites reviewed offered their services for free to the user, supporting themselves via advertisements. The major advertisers included magazines, software makers, computer makers, telephone companies, insurance companies, e-tailers, and credit-card companies.

Many of these sites want to track which students use their services by requiring students to register or by placing cookie files on their computers. Cookies are computer code that allows the site to track how a user moves through the site and often allow Web sites to track users

as they move through many other Web sites. Out of 100 sites examined, 52 attempted to plant cookies on users' computers.

Other findings related to education and the Internet

Adults using the Internet for learning
Adults, like teens, use the Internet to teach themselves new things or to satisfy their curiosity about a subject. Eighty percent of all Internet users have done an Internet search to find the answer to a specific question that they have, and 16% of adult Internet users go online on a typical day to get an answer to a question.

Some users have pursued more formal education online. In recent years, universities and colleges have begun offering parts of their course catalogs as online courses. That and the development of exclusively online universities have allowed Internet users to take formal classes online. Five percent of Internet users report taking a class online for college credit, and five percent also report having ever taken any other kind of class online. People under age 50 and those with at least some college education are the most likely to have taken classes online. On any given day, 1% of Internet users are taking a class online. That amounts to about one million adults.

Methodology

Data on Youth and Parents
These data come from a special survey of 754 children, ages 12 to 17, who use the Internet and one of their parents or guardians (total of 1,508 persons interviewed) and was conducted by Princeton Survey Research Associates between November 2, 2000 and December 15, 2000. For results based on this survey, the margin of error is plus or minus 4 percentage points.

Interviews for this survey were conducted among Internet households with a child age 12 to 17 that completed a Tracking interview with the Pew Internet & American Life Project some time during 2000. The Tracking polling was done in the continental United States and yielded a representative sample of the adult population of the United States. The callback survey was of those who had told us they had children with Internet access. Households were called back to determine eligibility. Once a household was deemed eligible, both a parent and a randomly selected child completed an interview. Some families could not be reached for the callback portion of the survey; others did not wish to participate. Thus, this sample cannot be considered a fully representative sample of the online U.S. teenage population. The final data were not weighted.

Throughout this report, the survey results are used to estimate the approximate number of Americans, in millions, who engage in Internet activities. These figures are derived from the Census Bureau's estimates of the number of adults living in telephone households in the continental United States. As with all survey results, these figures are estimates. Any given figure could be somewhat larger or smaller, given the margin of sampling error associated with the survey results used in deriving these figures.

Group discussions

This report also contains quotes from teenagers who participated in an online discussion group facilitated by Greenfield Online. The panelists were drawn from Greenfield's panel of Internet users. The group discussion was conducted from February 12 to 16 online, in a moderated, threaded discussion format in which participants were asked to respond to questions from the Pew Internet & American Life Project, queries from the moderator, as well as the responses of other members of the group. The "Mindstorm"® group discussion lasted for five days and had 21 respondents who completed all five days. The group was made up of 11 females and 10 males, and ages ranged from 13 to 17. Participants in the Greenfield Mindstorm were offered a cash incentive to participate. For both group discussions, parents and children were informed of the nature of the research. All identifying information has been removed from the comments from teens from both group discussions.

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About the Pew Internet & American Life Project

The Pew Internet & American Life Project creates and funds original, academic-quality research that explores the impact of the Internet on children, families, communities, the work place, schools, health care, and civic/political life. The Project is an independent, nonpartisan organization that aims to be an authoritative source for timely information on the Internet's growth and societal impact. The Project is a non-profit initiative affiliated with the Pew Research Center for People and the Press. The project is fully funded by The Pew Charitable Trusts.