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ABSTRACT

A study gathered detailed baseline data on Indiana secondary (grades 7-12) social studies teachers use of the Internet/WWW in their teaching. An additional goal was to identify factors that might be related to the use of the Internet in Indiana social studies classrooms and to determine barriers that might keep teachers from using the Internet/WWW more frequently. A survey was mailed to 350 randomly selected teachers, drawn from a list of 4,103 high school and middle school teachers in public and private schools. The questionnaire solicited general background information on computers and computer use; asked about respondents' own use of the Internet/WWW, their use of the Internet with students, and perceived barriers to Internet use; asked for general background information about respondents; and contained open-ended questions designed to provide more detailed data on respondents' general beliefs about the Internet and their classroom uses. Final respondent total was 191, for a 54.6% response rate. Findings suggest that, although social studies teachers in Indiana have widespread access to the Internet/WWW, have had cursory training in computers, and manifest a desire to use the technology in their teaching, few teachers in this study were using this medium for much more than information gathering. It was clear that teachers who were more comfortable using the Internet were more likely to use it in their classes; it is possible that classroom access is only a necessary precursor to use. Unless professional development in this area focuses more on development of meaningful social studies teaching and curriculum, the Internet/WWW will continue to be underutilized in the social studies classroom. (Contains 7 tables of data, 4 notes, and 16 references.) (BT)

"Teachers Would Have to be Crazy Not to Use the Internet!":

A Preliminary Analysis of the Use of the Internet/WWW by Secondary Social Studies Teachers in Indiana

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To thrive in today's world and tomorrow's workplace, America's students must learn how to learn, learn how to think, and have a solid understanding of how technology works and what it can do. Teachers hold the key. In fact, teachers are perhaps the single most important factor determining the quality of education.

-- (CEO Forum on Education and Technology Second Annual Report, 1998; downloaded from http://www.ceoforum.org/REPORTS/REPORT99/HIGHLIGHTS.HTML)

Many of the social studies teachers in my school do not use the technology available. I think you will find that younger teachers are using technology more. I use the Internet w/lower level students to get their attention. Many people say exploratory learning is important. There is no better way for kids to explore a subject than to do it on the net. I have students getting excited about what the find. Often they feel they get info I don't know. Sometimes they do. Often times people think math and science are the only subjects that use computers. Social studies teachers need to use the Internet. We already have a bad reputation of being boring teachers of a boring subject.

-- (Indiana high school social studies teacher)

Introduction

As the two quotes above--each in their own way--imply, we live in an information-rich society, one in which--via various forms of technology--information, on almost any topic, can be obtained nearly instantaneously. Increasingly, access to this information--through the medium of the Internet/WWW--is growing among the nation's schools (Becker, 1999). Because of its interactive and multimedia nature, the Internet/WWW has been highly touted as an increasingly important aspect of both elementary and secondary education. Powerful benefits to using the Internet/WWW in the classroom include the ability to break down the classroom's physical limitations and expand students' experiences (Wilson, 1995), development of students' inquiry and analytical skills (Braun, et al., 1997) and expanding student experiences with visual technologies (White, 1997). Becker (1999) concluded "along with word processing, the Internet may be the most valuable of the many computer technologies available to teachers and students (p. 32)."

Review of Related Literature

Research on Internet/WWW Use. In spite of these potential benefits, however, and the widespread proliferation of the Internet/WWW, recent research has indicated that few teachers have attempted to employ the Internet/WWW in their classrooms. Coley, et al., (1997) stressed that "computers, in and of themselves, do very little...the presence of technology in the classroom does not automatically inspire teachers to rethink their teaching (p. 9)." Those teachers who have attempted to use this new technology often lack the skills necessary to use this resource most efficiently (Leu, et al., 1997). Indeed, national data have suggested that eighty-five percent of teachers (eighty-seven percent in Indiana) had less than nine

clock hours in general training--one would assume that Internet/WWW training was some subset of these nine hours—in using the computer in the classroom (Coley, et al., 1997).

Moreover, even when teachers do use the Internet/WWW in their classrooms regularly, the vast majority use it primarily as a source of information for themselves: a research tool for planning lessons to be taught in a more traditional manner. Indeed, rarely do teachers have students engage in activities that employ the Internet/WWW in significant ways that harness the potential benefits of the medium (Becker, 1999). This is not so surprising given that, in addition to little training on computer use generally, teachers have little knowledge related to integrating the Internet/WWW into the classroom specifically (Topp, et al., 1995)

Internet/WWW Use in Social Studies Classrooms. Internet/WWW resources abound for teachers of all subject areas and all grade levels, but, for many reasons, such resources seem as well-suited to the social studies as for any other subject area (Braun, et al., 1998). This may be due primarily to the interdisciplinary, media-rich structure of the Internet/WWW which corresponds very well with the structure of the field of social studies. As one Indiana social studies teacher in the current study put it:

> I support the use of the Internet in my subject. I appreciate the resources available and I plan to spend more time this summer looking up specific topics. I assign many inquiries in which students can use the Internet for their research and I have several students who gave power-point presentations. Some of our feeder schools teach hyper-studio in 5th grade. I have used the Internet more this year because it is available on our school network. The Internet has been very helpful with the Impeachment trials and Career units that we are currently using.

In spite of this perceived 'fit,' with social studies education, however, little research has been directed toward the use of the Internet/WWW in social studies classrooms specifically. In an attempt to fill this gap, this study explored the degree to which secondary (7-12) social studies teachers in the state of Indiana were employing the Internet/WWW in their classrooms, the purposes these teachers were using the Internet/WWW for and factors that may have contributed to or detracted from such classroom use.

Internet/WWW Use in Secondary Classrooms. Some research has been conducted on the use of the Internet/WWW in secondary content areas other than social studies. For example, Murfin (1995) conducted a survey of telecommunication use among secondary science teachers in New York City. Murfin found that nearly all of the science teachers surveyed were unfamiliar with common Internet techniques and concluded that "the use of the Internet has actually been a rare occurrence in many public schools (p. 10)" and that "the Internet is still a dream for many New York City schoolchildren (p. 11)."

Hack and Smey (1997) surveyed teachers in three urban Connecticut schools and found that more than half the high school teachers (9-12) were not using the Internet/WWW in their classrooms. Hack and Smey found that teachers in math and the sciences used the Internet/WWW more than those in the social studies, but not much more. Approximately two-thirds of the high school math and science teachers reported using the Internet/WWW at least once per week. Unfortunately, this study provided little description of how these teachers employed the Internet/WWW in their classrooms.

Zenanko, et al. (1996) surveyed middle school teachers in northeast Alabama to determine their use of the Internet/WWW. Findings indicated that nearly two-thirds of respondents (across all subject areas) had never employed the Internet/WWW in their classroom teaching. Zenanko attributed this lack of use to three main factors: (1) lack of access to Internet/WWW in classrooms, (2) lack of training and (3) limited resources for planning to use the Internet/WWW in classroom teaching.

It seems clear that while access to the Internet/WWW in schools has grown in recent years, the widespread use of this medium in the classroom still appears to lag behind. Indeed, a nationwide study by Becker (1999) found that nearly a third of teachers (from grade 4-grade 12) do not use the Internet/WWW at all in their classrooms with another forty percent admitting to 'occasional' use (p. 5). These results beg the question: "Why aren't teachers using the Internet/WWW more in their classrooms?"

Data on barriers to effective technology use in the classroom suggest that many teachers encounter logistical or technological problems that they lack the training and/or support to resolve (Coley, et al., 1997). Other data suggest that teachers know very little about the medium of the Internet/WWW before entering training workshops and little more after completion (Topp, et al. 1995) and that many teachers feel the need for much more pedagogical knowledge in order to effectively plan for using the Internet/WWW in the classroom (Coley, et al., 1997).

Research Questions

The current study was designed to gather data on many of the issues outlined above. The primary goal of this preliminary study was to provide detailed baseline data on secondary (grades 7-12) social studies teachers (in Indiana) use of the Internet/WWW in their teaching. An additional goal was to identify factors that might be related to the use of the Internet/WWW in Indiana social studies classrooms and to

determine what barriers might be keeping social studies teachers in Indiana from using the Internet/WWW more frequently. With these goals in mind, this study attempted to answer the following research questions:

1. To what degree do secondary social studies teachers have access to computers and the Internet/WWW at the building and/or classroom level?
2. How comfortable are secondary social studies teachers in Indiana with a variety of computer applications/uses?
3. To what degree do secondary social studies teachers in Indiana use the Internet/WWW?
4. For what purposes do secondary social studies teachers in Indiana use the Internet/WWW?
5. What degree of computer/Internet training have these teachers had and what impact has this training had on Internet/WWW use?
6. What factors are associated with certain types (e.g., higher-order uses) of Internet/WWW usage?
7. What characteristics do higher-frequency users of the Internet/WWW share? How do these characteristics differentiate higher-frequency users from lower-frequency users?
8. How do social studies characterize the Internet/WWW in general and for teaching social studies specifically?
9. What do social studies teachers believe about the level of Internet/WWW training they have received and the barriers to effective classroom use of the Internet/WWW?

Methods

In an attempt to answer these research questions, the author conducted a mailed survey of high school (grades 9-12) and middle school (grades 7-8) social studies teachers (both public and private) in Indiana. The population for the survey was determined using Indiana Depart of Education databases for the 1997-1998 school year and included 4,103 secondary social studies teachers. From this list, a simple random sample of 350 was drawn (McNamara, 1994)[1]

A packet was mailed to each of the 350 teachers selected. Each packet contained one study questionnaire, a self-addressed stamped return envelope, a cover letter describing the study and a small incentive for each respondent. The cover letter indicated that the questionnaire should be completed only by the teacher it was addressed to and described the importance of returning the questionnaire.

The questionnaire was divided into four sections. The first section solicited general background information on computers and computer use. The second section of the questionnaire asked respondents about their own use of the Internet/WWW, their use of the Internet/WWW with their students and perceived barriers to Internet/WWW use. The third section asked respondents to provide general

[1] McNamara suggested a sample of 357 would be necessary to approximate representation for a population of 5,000. Thus, a sample of 350 for a population of 4,100 should be appropriate.

background information. The final section consisted of several open-ended questions designed to allow respondents to provide more detailed data on their general beliefs about the Internet/WWW and their classroom uses.

Following the initial mailing, 151 teachers (43% of the sample) responded. After three weeks, a follow-up postcard reminder was mailed to the 199 non-respondents. The postcard resulted in 40 additional responses, for a total of 186, a 53.1% response rate. The author attempted to contact a random sample of 10 the remaining non-respondents: first by phone, then by a third mailing and finally by phone again. This was an attempt to determine if the teachers who did not respond initially differed in any significant way from those teachers who did (Miller and Smith, 1983). All but the final phone survey proved unsuccessful. The author was able to gather data from five of the ten randomly selected non-respondents. Subsequent analysis indicated that the non-respondents did not differ significantly from those who responded initially or in the follow-up mailing. These final five respondents were added to the initial group for a final total of 191 responses; a 54.6% response rate. This is a relatively strong response rate for this type of population,[2] but it is important to note that the data analysis that follows must be interpreted cautiously, as these results may reflect sample error, response error or both.

Data Analysis

Responses to the fixed-responses items on the questionnaire were coded and entered into a computer spreadsheet program. In order to answer the first three research questions, frequency distributions and means (with standard deviations) were calculated for all variables. Correlation coefficients (using Kendall's *Tau-b* for ordinal data) and chi-square statistics were calculated to determine whether Internet/WWW training and other variables were associated with increased Internet/WWW use generally and increased higher-order Internet/WWW use specifically. An Internet/WWW use score--based on self-reported uses of the Internet/WWW--was calculated for each respondent. In order to determine if higher-frequency Internet/WWW use teachers differed significantly from lower-frequency use teachers, group mean scores were compared using t-statistics and group proportions were compared using chi-square statistics.

[2] While Boser and Green (1997) found the mean response rate among a sample of refereed journal articles describing surveys of K-12 educators to be 62.1%, the response rates ranged between 25.2% and 80.0%.

The open-ended responses were literally transcribed and then analyzed using a very simple comparative pattern analysis (Patton, 1990). Using this technique, the researcher first began to look for recurring regularities in the data. These regularities represented initial categories of classification. Once categories of classification were established, the researcher "work(ed) back and forth between the data and the classification system to verify the accuracy of the system (Patton, 1990, p. 403)." This produced a very rough, first cut of the qualitative data into broad categories of analysis (all that time would allow...). In the report that follows, these data are used to support—and at times stand in contrast to--the more quantitative, fixed-response data.

Results

Demographic data. Table 1 presents all demographic data for study respondents. These data indicated that respondents to the survey were relatively evenly distributed across all middle school and high school grades levels, with a slightly higher proportion of the sample teaching in grades 10, 11 and 12 and a slightly lower proportion teaching in grade 9. Years teaching varied widely. Respondents averaged slightly over 16 years of teaching experience, but a large standard deviation indicated a wide dispersion. Indeed, the two largest proportions of respondents were seen in the 3-5 (17.1 percent) and 21+ -year categories (36.3 percent).

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insert Table 1 about here

Respondents primary course assignments were most likely to be U.S. History (nearly one-half), followed (but not very closely) by Global Studies and Economics. Results indicated that more than two-thirds of the respondents held a comprehensive 'social studies' license. Less than one-fifth of the respondents held licensure in History and less than five percent held a license in some other teaching area, outside the social studies.

Because an intuitive argument might be made about an association between Internet/WWW connectivity (and thus its use) and school size and location (e.g., rural, large town, etc.), data were collected on these variables. Results indicated that respondents to the survey taught at schools that represented all

six of the United States Census Bureau location categories (see Table 1 for listing) with the largest groups being from 'small towns' (26.4%) and 'mid-size and large central cities' (20.8%). Respondent's school size ranged across all five categories (see Table 1 for listing) with the largest groups teaching in schools with between 350 and 750 students (40.5%) and in schools with a student populations of between 751 and 1250 (32.3%)

School and Home Computer Use. Respondents reported spending an average of 4.43 hours per week (SD=5.42 hours) working on the computer at school (see Table 2). While this result seemed to imply that respondents were spending about an hour a day on their classroom computers, it should be noted that nearly one-half the respondents indicated that they spent less than two hours per week working on school computers. Respondents reported similar patterns of use for home computers. Respondents reported spending an average of 3.74 hours per week working on their home computers (SD=4.14 hours) but again nearly half reported using their home computers for less than two hours per week.

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insert Table 2 about here

Access to Computers and the Internet/WWW. National data have suggested that approximately 90 percent of the nation's schools have access to the Internet in some location within the school building (Becker, 1999). This would seem to imply that Internet access is almost, but not quite, universal. Results from this study indicate that universal access in Indiana may be even closer as 95.8 percent of respondents to this study reported having access to the Internet/WWW somewhere in their school building (see Table 3).

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insert Table 3 about here

National data have also suggested that access to Internet/WWW within individual classrooms is increasing as well. Becker (1999) found that "more than one-third of U.S. teachers (39 percent among 4-

12 grade teachers) now have some kind of Internet access in their own classroom (p. 3)." Again, the results from the current study suggested that Indiana may well be above the national average as 57.6 percent of the respondents indicated that they had Internet access in their social studies classrooms (see Table 3). Moreover, nearly 83 percent of respondents reported having computers in their rooms with the average being 1.6 computers per classroom. Chi square analysis indicated no significant association between school or classroom Internet/WWW access and school location or school size. That is, larger schools and urban fringe (suburban) schools where no more likely to have Internet/WWW than did smaller schools or rural or central city schools. Overall, these results would seem to run counter to the belief that a lack of access to the Internet/WWW at the building or classroom level is a significant barrier to classroom teachers' use of the Internet/WWW. Clearly, the vast majority of respondents in this study already had such access.

Degree of Comfort with Various Computer Applications. Respondents were asked to indicate their degree of comfort with various computer applications in order to determine whether social studies teachers' use (or non-use) of the Internet/WWW was related to a general discomfort with using computers or computer applications. The results (see Table 4) suggested that while social studies teachers in Indiana were uncomfortable using many computer applications in the classroom (e.g., HyperStudio), the use of the Internet/WWW was not among these. In fact, use of the Internet/WWW was one of only two computer applications (word processing was the other) for which a majority of respondents felt 'moderately' or 'very' comfortable using in the classroom. Moreover, only 8.9 percent of respondents indicated that they were 'uncomfortable' using the Internet/WWW in the classroom. Teachers in this study felt much less comfortable using other applications such as databases (34.0 percent felt 'uncomfortable' using these in class) instructional simulations (44.9 percent 'uncomfortable') and HyperStudio (63.4 percent 'uncomfortable'), than they did using the Internet/WWW (8.9 percent 'uncomfortable').

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insert Table 4 about here

Internet/WWW Use. Of course being comfortable with using the Internet/WWW and actually using it in the classroom are two different things. Data indicated that the majority (more than 85 percent)

of respondents were employing the Internet/WWW in some way for professional use (e.g., planning, research, etc.). Additionally, more than one-third of respondents indicated they were using the Internet/WWW at least three times per week.

In order to determine how, exactly, secondary social studies teachers in Indiana were using the Internet/WWW in their classrooms, respondents were asked to indicate the degree ('never,' 'rarely,' occasionally,' or 'frequently') to which they had engaged in nine types of Internet/WWW use (see Table 5 for the nine uses). For only two of the nine types ('student use of the Internet/WWW to gather background information' and 'teacher use to gather information for lessons') did a majority of respondents indicate at least occasional use. Fewer than ten percent of respondents indicated they were frequently employing six of the nine uses. In fact, a vast majority of respondents indicated that they were rarely, if ever, employing these six uses in their classrooms (see Table 5).

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insert Table 5 about here

Of these nine types of uses of the Internet/WWW, three can be classified as very low-order in nature (see Table 5 for these). That is, these information-gathering uses of the Internet/WWW were roughly analogous to low-order categories (e.g., 1.0 Knowledge) in Bloom's taxonomy of the cognitive domain (Bloom, et al., 1956). The remaining six Internet/WWW uses were roughly analogous to more higher-order categories in Bloom (e.g., 3.0 Application, 5.0 Synthesis). Results indicated that the lower-order variety of uses were those most likely to be used by respondents occasionally or frequently. It was clear that when these social studies teachers in the current study were using the Internet/WWW, it was nearly exclusively for information-gathering purposes.

Conversely, very few teachers seem to engage students in the interactive, multimedia aspects of the Internet/WWW. For example, two-thirds of respondents had never used the Internet/WWW to take students on a 'virtual fieldtrip' of a museum site and slightly less than half had never developed an interactive lesson that required students to use the Internet/WWW to complete some task or assignment (see Table 6). It should be noted that correlation analysis indicated no significant association between any

of the nine types of uses and either school size or location. That is, teachers at larger schools central city schools were no more likely to employ any of these Internet/WWW uses than were teachers in smaller schools or in rural schools.

Factors Associated with Types of Internet/WWW Use. While it was clear that many respondents were not using the Internet/WWW in very dramatic or interactive ways, some of the social studies teachers in the study were employing a variety of higher-order uses with their students. What background variables were associated with those teachers who were using the Internet/WWW in more higher-order ways in their classrooms?

Not surprisingly, the most powerful predictor of Internet/WWW use was the teacher's degree of comfort (which ranged from 'uncomfortable' to 'very comfortable') using the Internet/WWW in the classroom (see Table 6). Results suggested that those teachers who indicated that they felt the most comfortable using the Internet/WWW were significantly more likely to employ all nine types of Internet/WWW use investigated in this study (Kendall's Tau-b coefficients ranged from .235 to .400; $p<.05$).

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insert Table 6 about here

Respondents were asked to indicate whether they had participated in any formal training for using the Internet/WWW in the classroom. Data suggested that those respondents who had participated in formal Internet/WWW training were significantly more likely to employ all nine types of Internet/WWW use investigated in this study than those respondents who had not (Kendall's Tau-b coefficients ranged from .189 to .294; $p<.05$).

For these respondents, there was no significant relationship between the number of years respondents had been teaching and seven of the nine types of Internet/WWW use (see Table 6). In other words, teachers with more years of experience were no more likely to employ these seven types of Internet/WWW use than those with fewer years experience and vice versa. Data did indicate a significant moderate negative relationship between number of years teaching and the Internet/WWW uses 'gather

background information for lessons you teach' (r=-.185; p<.01) and 'take students on virtual field trips using the Internet' (r=-.171; p<.01). These results imply that teachers with fewer years of experience were more likely to use these Internet/WWW strategies than those teachers with more years of teaching experience.

One of the perceived barriers to teacher's classroom use of the Internet/WWW has been the lack of the computers, especially in the classroom, needed to access the Internet/WWW. Evidence presented earlier in this report suggested that, for the Indiana social studies teachers in this study, Internet/WWW access was quite widespread, indeed almost pervasive, as nearly 58 percent of respondents indicated that they had access to the Internet/WWW via a computer in their classroom. Were social studies teachers who had classroom access to the Internet/WWW more likely to use it in their teaching? The answer is a qualified yes. Correlation analysis indicated that while teachers with classroom access were significantly more likely to employ five of the nine types of Internet/WWW use, the coefficients were relatively small, ranging from .142 to .234 (p<.05).

Data from the open-ended responses, however, presented a bit more uneven picture of the importance of classroom access. For example, one high school teacher commented "the biggest obstacle is accessibility. We need to have a lab with 25 stations!" A middle school teacher echoed these feelings:

> Internet usage would be fine, but it is not convenient or easy to do at our school. At this point, it is really only available for teacher's use. Students have no real way to use it. The lab has no access. Technology talk is great, but it needs to filter down to the regular classroom.

Data on the numbers of computers available in a classroom or in a computer lab were mixed. Correlation analysis indicated significant relationships between only three of the nine types of Internet/WWW uses and the number of computers in the classroom and between only two of the nine types of Internet/WWW uses and the number of computers in the classroom (see Table 6). These result suggested that, for this group of social studies teachers, the classroom use of the Internet/WWW was more closely related to the presence of at least one Internet/WWW socket (for classroom access) than to the number of machines available for use in either the classroom or the computer lab. It should be noted that data indicated a significant, but rather low, correlation between school size and number of computers in the school's computer lab (r=.171, p<.05). This result seems logical as the larger the school, the more likely that computer labs in that school will also be large. Additionally, no significant relationship existed

between the size of a respondent's school and number of computers in that respondent's classroom, nor between a school's location and the number of computers in a respondent's classroom or in the school's computer labs.

Higher- and Lower-Frequency WWW Use. An Internet/WWW use score was developed for each respondent by calculating a respondent's average Internet use score across the nine Internet/WWW use types.[3] Respondents whose Internet/WWW use score was above 2.75 (recall that, on the questionnaire, 1='never use', 2= 'rarely use', 3='occascionally use' and 4='frequently use') were classified as *higher-frequency users*. Respondents whose Internet/WWW use score was below 2.0 were classified as *lower-frequency users.*[4] Twenty-four respondents were classified as higher-frequency users (12.6 percent of respondents) and 93 respondents were classified as lower-frequency users (48.7 percent).

Analysis indicated that higher-frequency users did not differ significantly from lower-frequency users in number of years taught or in the number of computers in their classrooms (see Table 7). However higher-frequency users had access to a significantly greater number of computers (nearly twice as many) in their various labs as did lower-frequency users. Additionally, a significantly greater percentage of higher-frequency users held Master's degrees (37.50 to 26.67) and had access to the Internet/WWW in their classrooms (83.33 to 50.53). Moreover, the results suggested that frequency of Internet/WWW use and formal training on the use of the Internet/WWW were related as nearly all (95.83%) of the higher-frequency users had had Internet/WWW training while only slightly more than half of the lower-frequency users had such training. No significant association was found between the frequency of Internet/WWW use and the size and location of the school where respondents were teaching.

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insert Table 7 about here

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[3] Each respondent indicated his/her frequency of use as 'never'=1 to 'frequent'=4 for each of the nine uses. These ratings were summed and then divided by nine to arrive at each participants use score.

[4] While these cut points might seem arbitrary, an Internet/WWW use score of less than 2.0 implied that these respondents were very often 'rarely' (or never) employing the various use types in class. Conversely,

Chi square analysis indicated that a significantly greater proportion of higher-frequency users were 'very comfortable' using various computer applications than were lower-frequency users (see Table 4). This was especially true for degree of comfort using the Internet/WWW as 85.7 percent of higher-frequency users indicated they were 'very comfortable' using the Internet/WWW compared to only 55.9 percent of lower-frequency users.

Respondents' Desire to Use the Internet/WWW. Eight percent of respondents stated they had no desire to use the Internet/WWW in their classroom teaching and twelve percent of respondents indicated that they were using the Internet/WWW about as much as they desired. In fact, some of these respondents were adamant in their opposition to Internet/WWW in the social studies classroom. A high school history teacher noted:

> I'm not convinced the Internet is great progress over the school or public library. It can be an enormous waste of time, a migraine frustration, a panacea that doesn't "pan" out, a way to spent a lot of time learning technology with a disproportionately small return in learning of subject matter. Too often the means becomes the end.

A second respondent--a middle school social studies teacher indicated that he remained as equally unconvinced:

> I'm not sold on the fact that the Internet is all it's cut out to be. It seems that the more technology we get, the more helpless we become (Y2K bug), etc. As a teacher, and as a human, I look to reliable solid and simple things that get the job done effectively. What's wrong with kids researching like the 'good 'ol days'? I know computer literacy is one thing, but computer dependency is another.

A number of respondents' views on the use of the Internet/WWW in the social studies classroom was represented by the teacher's belief that rather than a powerful tool, the Internet was in fact a real distraction away from he believed to be 'true' learning in the social studies (although it is interesting to note that this particular teacher *does* have a web page for his class!):

> I am not really interested in computers in the classroom. I see them more as an excuse to avoid real teaching by substituting fun activities in place of dispensing knowledge. I do, however, have a web page. A student who was interested in such things as the Internet created it for me. You may look me up at: members.home.com/***** (URL edited for anonymity)

More than eighty percent (n=154) of respondents, however, indicated that they wanted to use the Internet/WWW more often than they currently were. This result implied that most of the teachers in this

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respondents with an Internet/WWW use score of 2.75 or above implied that respondents were 'occasionally'

study saw at least some utility in the Internet/WWW and that they perceived at least some benefit in the Internet/WWW for their classroom teaching.

Barriers to Use. Respondents who indicated they wished to use the Internet/WWW more in their social studies classrooms were asked what factors prohibited them from increasing their use. The most common factors cited included: lack of training in how to apply the Internet to the classroom (59.5%), problems with Internet access in classrooms (47.7%), lack of general computer training (32.7%), concern over students accessing inappropriate materials via the Internet/WWW (30.1%) and lack of Internet/WWW access in the school building (22.2%)

Several interesting points emerged from these results. First, it was clear that, the single greatest barrier to implementing the Internet/WWW was the lack of training necessary to use it in classrooms. This point, while borne out in earlier data analysis, is worth revisiting. Indeed, as noted earlier, formal training in classroom applications of the Internet/WWW was one of the most significant predictors of classroom use generally and of higher-order use specifically. Coupled with these results, it seems clear that one way to increase use of the Internet/WWW among social studies teachers in Indiana is to provide more access to training. A number of respondents' open-ended responses confirmed this. These respondents pinpointed a lack of training focused on the pedagogy and curriculum development associated with the Internet/WWW as being particularly problematic. One high school teacher noted:

> I feel that the use of the Internet can probably enhance one's teaching, but I feel very inadequate when it comes to the utilization of the Internet as it applies to my particular situation. I guess what I am saying is that I feel a need for training in this particular area.

A second high school teacher was very pointed in identifying what many critics have labeled the 'inch deep, mile-wide' approach to training and Internet/WWW curriculum development in the social studies:

> I would like to attend a workshop where an actual lesson is taught and authentic (alternative) assessments are given. We need hands-on, not just what web sites to access. We need to see it done, then practice it.

Second, of those teachers who wanted to use the Internet more than they were, nearly a third indicated that fear of students accessing inappropriate material (e.g., pornography, hate speech, etc.) or inaccurate information over the Internet prohibited these teachers from using the Internet more in their

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and often 'frequently' employing the use types in class.

teaching. Such fears, whether real or imagined, seemed to act as real restraints on these teachers' use of the Internet/WWW. The following open-ended responses (from different high school teachers) addressed these concerns:

> My major problem with the Internet is my impression that the scholarly level of historical material is uneven. It seems to me that every opinion, true or false, documented or not, exists on the Internet. Kids take stuff off the net and spit it back as gospel. They do the same with books, but it just seems to the old fashioned amongst us, that books have better quality control.
>
> I encountered a problem with students turning in Internet term papers rather than their own work. I have also had to deal with the question of accuracy of the information students provide.
>
> It also has potential, regretfully, for too much misuse, such as: exposing students to numerous pornographic sites, widespread plagiarism and/or "honest plagiarism" by many students.

Finally, a small percentage (3.9 percent) of those teachers wishing to use the Internet/WWW more often indicated that their school building or school corporation had a policy prohibiting Internet usage in the classroom. When asked to elaborate on this policy, one respondent said, "our policy states that NO students will have direct Internet access to the Internet...teachers must be at the computer." A second respondent seemed to confuse the issue of an 'acceptable use policy' with a moratorium on classroom use: "we teachers and students must sign a liability waiver...parents sign for students." A third respondent echoed this concern with his school's acceptable use policy: "the usage policy is overly restrictive...only those students who have a form on file may witness Internet use...if there is one student (and there is always one) who doesn't have a form on file, no one in the room can view Internet usage." For a portion of the teachers in this study then, administrative barriers to the Internet/WWW were the most difficult to overcome. In spite of these kinds of difficulties, however, some respondents indicated that they had addressed these policy issues in their classrooms and had moved beyond these concerns. Take, for example, the high school history teacher who wrote:

> I think it's greatly underused in my school and nation-wide. It is feared by administrations because the information is unregulated and uncensored. While these fears are just, they do not warrant the kind of 'universal precautions' many teachers' face. A social studies teacher is crazy not to use the Internet. I have added resource information to my classes that I simply would have assumed were unavailable without it. Could I get 'burned' later if a student accesses bad material on the net? No way. I'm not the teacher who says, "Go ahead, Bob, surf around." Internet should be a monitored and planned part of the class, just like any other. I don't advocate free net wondering any more that I would show a video I hadn't previewed. Anyway, my feelings are pretty clear.

Discussion

While the findings from this study must be interpreted cautiously, several important conclusions can be drawn. First, despite the fact that social studies teachers in Indiana had widespread access to the Internet/WWW, had some cursory level of computer training and had a clear desire to use the Internet/WWW in their teaching, few teachers in this study were using this powerful medium for much more than glorified information gathering. Indeed, this study found that nearly half the social studies teachers surveyed were lower-frequency—rarely, if ever--users of the Internet/WWW.

Second, it was clear that teachers who were more comfortable using the Internet/WWW were more likely to use it in their classes. While this conclusion might seem self-evident, it leads us to the question: How can we increase social studies teachers' comfort level with the Internet/WWW? Clearly one way to increase teachers' comfort with the Internet/WWW is to improve the level of training focused on its use. Indeed, findings from other studies of teacher Internet/WWW use have reached the same conclusions. For example, Gallo and Horton (1994) found that teachers required ongoing Internet training to reach a point where they felt comfortable using the Internet in classrooms. Similarly, Wiesenmayer and Meadows (1997) discovered that the Internet training had to be more pedagogical in nature--not just how to access the Internet, but how to use it in meaningful ways in the classroom. Wiesenmayer and Meadows concluded that without such pedagogical training, teachers may end up believing that the Internet has "great resources, but not for my classroom (p. 333)."

This study attempted to develop a profile of teachers who were higher-frequency users of the Internet/WWW and to determine if certain factors influenced that use. The results here were mixed. For example, while having Internet access in one's classroom was clearly related to a respondent's degree of Internet/WWW use, the relationship was moderate at best and in some cases, non-significant. This seemed counterintuitive as, theoretically at least, those who have classroom access should be using the Internet more than those who don't. However, it is possible that classroom access is only a necessary precursor to use (i.e., without it, nothing much happens) and not a guarantor of use (i.e., other conditions must occur as well).

What other kinds of conditions seemed to increase the probability of Internet/WWW use? Advance study and/or training was one such condition: significantly more higher-frequency teachers held Master's degree than did lower-frequency users. Additional Internet/WWW training, as described earlier, also seemed to be an important condition: nearly all the higher-frequency users had some form of Internet/WWW training versus only half of the lower-frequency users. Several open-ended responses suggested, however, that not just any training would do. What teachers clearly did not want were the 'one shot' one-half day workshops; those often given during professional or superintendent's days. Respondents indicated that these types of workshops, often given without meaningful follow-up, left teachers frustrated and unprepared to take complete advantage of the Internet/WWW in social studies classrooms: "the one-day technology conferences I have had to attend can not teach teachers new tools and have them leave with a sense of confidence."

One variable that was not significantly related to Internet/WWW use was years of teaching experience. There was no significant difference in the mean number of years taught by high- and lower-frequency users. This result seemed to be counterintuitive as well. Indeed, given the recent calls for integrating more educational technology into preservice teacher preparation programs, one would expect that newer teachers would be more comfortable using the Internet/WWW--than those who started teaching, say, twenty years ago--and thus more likely to integrate its use into their classrooms. This was clearly not the case. Again, caution is warranted here, but these results seem to call into question the degree of Internet/WWW training that preservice social studies teachers in Indiana are receiving. If new teachers in the field are no more likely to use the Internet/WWW than their veteran counterparts and--as the results of this study seem to indicate--training in the use of the Internet/WWW is a key predictor of classroom use, than perhaps these new teachers' preservice training in technology was somehow lacking. However, this result may also have a more positive interpretation. It may be case that some social studies teachers in Indiana, no matter their age or experience, are beginning to see the value of the Internet/WWW and are developing the necessary skills and talents to employ it in meaningful ways. As one respondent tentatively indicated:

> As an older teacher, one with 27 years experience, new technology is somewhat intimidating to me. We did not have computers or Internet etc. I need to be trained to better utilize the possibilities we now have and will have in the future. The knowledge of historical materials is overwhelming on the Internet but I do wish to use them more often in the future.

To conclude, it seems fair to call the proverbial glass half-full. Indeed, access to the Internet/WWW by social studies teachers in Indiana was higher than expected (based on national data) and a large number of teachers indicated they were integrating this technology in meaningful ways in their classrooms. Additionally, some tentative findings emerged about what factors might be associated with Indiana social studies teachers' use of the Internet/WWW. However, it should also be noted that unless the current state of professional development (both preservice and inservice) in this area focuses more on the development of meaningful social studies pedagogy and curriculum, the Internet/WWW will continue to be underutilized in social studies classrooms. This powerful medium may then suffer the same fate as "the computer, the television and other technological 'silver bullets'...gathering dust in the back of the classroom (Wiesenmayer and Meadows, 1997, p. 333)."

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Table 1. Sample respondent profile (n=191)

Variable		Percent	Variable	Percent
Grade Level	6	10.8	*School Size*	
	7	14.8	0 – 350	5.7
	8	13.6	351 – 750	40.5
	9	9.7	751 – 1250	32.3
	10	15.3	1251 – 2000	13.9
	11	15.3	2001 - up	7.6
	12	16.5		
			School Location	
Years Teaching	1 - 2	9.1	Rural	18.2
[mean=16.1 (11.2)]	3 - 5	17.1	Small town	26.4
	6 - 10	15.9	Large town	5.7
	11 - 15	10.2	Urban fringe of mid-size city	16.4
	16 - 20	11.4	Urban fringe of large city	12.6
	21 +	36.3	Mid-size/large central city	20.8
Primary Course	US History	46.9		
	Global Studies	11.3		
	Economics	11.3		
	World History	9.6		
	World Geography	6.2		
	Government	4.5		
	Psychology	4.0		
Certification	Social Studies	70.6		
	History	16.4		
	Psych/Soc	1.7		
	Economics	1.1		
	Geography	.6		
	Other	4.5		

Table 2. Degree of school and home computer use by social studies teachers in study. (n=191)

	Hours	Percent responding
School use--hours/week:	0-2	48.6
[mean=4.43 (SD 5.42)]	3-5	28.9
	5+	22.5
Home use--hours/ week:	0-2	49.7
[mean=3.74 (SD 4.14)]	3-5	28.7
	5+	21.6

Table 3. Access to Internet/WWW by social studies teachers in the study (n=191)

Percent access to Internet/WWW		
In school building	95.8	
In classroom	57.6	
At home	57.1	
Number of computers	**Mean**	**Range**
In lab	39.5	0-30
In classroom	1.6	0-150

Table 4. Degree of comfort with various computer applications/uses. (n=191)

Application	Degree of comfort (% responding) Uncomfortable	Somewhat comfortable	Moderately comfortable	Very comfortable	X^2
Word Processing (ALL)	**3.1**	**10.5**	**22.0**	**63.4**	
Low-frequency WWW users	6.5	12.9	23.7	55.9	
High-frequency WWW users	0.0	8.6	5.7	85.7	10.93*
Internet/WWW (ALL)	**8.9**	**11.0**	**36.6**	**41.4**	
Low-frequency WWW users	15.1	11.8	44.1	25.8	
High-frequency WWW users	0.0	0.0	22.9	77.1	30.35**
Databases (ALL)	**34.0**	**29.8**	**22.0**	**11.5**	
Low-frequency WWW users	47.3	24.7	17.2	8.6	
High-frequency WWW users	11.4	40.0	25.7	22.9	16.61**
Laserdiscs (ALL)	**43.5**	**24.6**	**15.7**	**11.5**	
Low-frequency WWW users	55.9	18.3	12.9	8.6	
High-frequency WWW users	20.0	25.7	25.7	22.9	14.59**
Graphics programs (ALL)	**38.2**	**27.7**	**20.9**	**11.0**	
Low-frequency WWW users	49.5	30.1	11.8	5.4	
High-frequency WWW users	22.9	28.6	22.9	25.7	17.12**
Spreadsheets (ALL)	**36.6**	**30.9**	**19.9**	**9.9**	
Low-frequency WWW users	45.2	28.0	16.1	8.6	
High-frequency WWW users	20.0	31.4	31.4	17.1	9.69*
PowerPoint (ALL)	**44.2**	**26.3**	**14.7**	**8.9**	
Low-frequency WWW users	60.2	20.4	9.7	3.2	
High-frequency WWW users	14.3	34.3	17.1	31.4	33.58**
Computer Simulations (ALL)	**44.9**	**28.0**	**15.2**	**7.9**	
Low-frequency WWW users	61.3	18.3	11.8	2.2	
High-frequency WWW users	20.0	37.1	20.0	22.9	29.95**
Hyperstudio (ALL)	**63.4**	**18.3**	**9.4**	**3.1**	
Low-frequency WWW users	75.3	12.9	5.4	1.1	
High-frequency WWW users	34.3	34.3	14.3	14.3	25.26**

*p>.05
**p>.01

Table 5. Degree of various types of Internet use among respondents. (n=191)

	Degree of use (% responding)			
Type of use	Never	Rarely	Occasionally	Frequently
Encourage students to use the Internet to gather background information?*	6.1	11.2	42.5	38.5
Gather background information for lessons you teach?*	11.0	16.8	51.8	19.4
Gather multimedia (photos, maps, etc.) for use in lessons you teach?*	18.4	34.1	36.3	9.5
Assign students to use the Internet to develop multimedia reports/presentations?	35.2	26.3	27.9	8.9
Encourage students to use e-mail to contact other students or content experts (e.g.,historians)?	43.0	33.0	16.2	6.7
Develop interactive lessons that require students to use the Internet to complete some task or assignment?	49.7	24.6	21.2	3.4
Encourage students to develop their own WebPages for an assignment?	80.4	8.9	6.7	2.2
Take students on a "virtual fieldtrip" using the Internet to visit a museum or other on-line location?	67.0	17.9	11.7	1.7
Develop WebPages for the classes you teach?	81.6	8.9	6.7	1.1

*Indicates lower-order use; roughly analogous to Bloom's (1956) low-order categories (e.g., 1.0 Knowledge).

Table 6. Relationships between types of Internet/WWW and selected background variables.

Type of Internet/WWW use[@]	Internet/WWW training#	Degree of comfort using Internet/WWW[&]	Years teaching	Number of computers in lab	Number of computers in classroom	Internet access in classroom
Used for professional purposes (planning, research, materials, etc.)	.193*	.393**	-.083	-.124*	.111	.142*
Encourage students to use the Internet to gather background information.	.236**	.235**	.030	.067	.221*	.062
Gather background information for lessons you teach?	.235**	.400**	-.185**	.089	.130*	.142*
Gather multimedia (photos, maps, etc.) for use in lessons you teach?	.197**	.394**	.045	.071	.111	.128
Assign students to use the Internet to develop multimedia reports/presentations?	.189**	.374**	.055	.100	.083	.173**
Encourage students to use e-mail to contact other students or content experts (e.g.,historians)?	.294**	.242**	.012	.067	.003	.045
Take students on a "virtual fieldtrip" using the Internet to visit a museum or other on-line location?	.217**	.319**	-.117*	-.171**	.150*	.234**
Develop interactive lessons that require students to use the Internet to complete some task or assignment?	.274**	.278**	-.033	.248**	.170*	.189**
Encourage students to develop their own WebPages for an assignment?	.229**	.313**	.013	.073	.075	.147*
Develop WebPages for the classes you teach?	.191**	.310**	-.127	.011	.119	.012

#Kendall's *tau-b* (for ordinal data)
**p<.01
*p<.05

[@]1='never'; 4='frequently'
[&]1='uncomfortable'; 4='very comfortable'

Table 7. Comparative profiles of high frequency and low frequency Internet/WWW users.

Variable	Mean (SD)	t-statistic	p
Years teaching			
High frequency users	13.87 (10.46)		
Low-frequency users	16.02 (11.38)	.676	.413
Number of computers in classroom			
High frequency users	1.53 (2.10)		
Low-frequency users	1.25 (1.41)	.728	.395
Number of computers in lab			
High frequency users	70.01 (110.17)		
Low-frequency users	33.51 (33.52)	7.477	.007
		Chi-square statistic	p
Percent Master's degree held			
High frequency users	37.50		
Low-frequency users	26.67	9.99	.007
Percent Internet/WWW training			
High frequency users	95.83		
Low-frequency users	50.00	16.537	.000
Percent Internet/WWW access in classroom			
High frequency users	83.33		
Low-frequency users	50.53	8.424	.015

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