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ABSTRACT
                This Issue Brief presents data from two surveys conducted
through the National Center for Education Statistics' (NCES') Fast Response
Survey System (FRSS)—a 1999 survey of public school Internet access and a
1999 survey of public school teachers' use of computers and the Internet—to
examine whether teachers who report having classroom access and support (as
measured by both training and assistance for Internet use) are more likely to
report using computers and the Internet for instruction during class time.
This Issue Brief also examines teacher-reported school-level differences in
support for Internet use and classroom access to the Internet. Classroom-
level access to the Internet and support in the form of training and
assistance appear to be important factors in instructional use of the
Internet during class time. Half or less of teachers reported that all three
resources were available, and of these teachers, about two-thirds indicated
that they used computers or the Internet for instruction during class time.
Furthermore, among teachers who reported having all of these resources, the
percentage reporting instructional use of computers or the Internet during
class time did not vary by the proportion of poor and minority students at
these teachers' schools. However, teachers in schools with high enrollments
of poor and minority students were generally less likely to report the
availability of these resources. The rapid pace of change in the world of
education technology necessitates the further collection of data. A figure
and two tables present data on: percent of public school teachers reporting
use of computers or the Internet for instruction during class time, by the
availability of resources (1999); percentage of teachers reporting use of
computers or the Internet for instruction during class time, by availability
of resources (1999); and percent of public school teachers reporting the
availability of various Internet-related resources, by selected school
characteristics (1999). (AEF)

Beyond School-Level Internet Access: Support for Instructional Use of Technology.
Issue Brief

Issue Brief

BEYOND SCHOOL-LEVEL INTERNET ACCESS: SUPPORT FOR INSTRUCTIONAL USE OF TECHNOLOGY

April 2002

According to the National Center for Education Statistics (NCES) report *Teachers' Tools for the 21st Century: A Report on Teachers' Use of Technology*, teachers in schools with high poverty and schools with high minority enrollments were generally less likely to use computers or the Internet for instruction during class time than teachers in schools with low poverty and schools with low minority enrollment in 1999 (Smerdon et al. 2000). This gap existed despite the fact that nearly all public schools had access to the Internet, regardless of poverty level (Williams 2000). Two factors that may be related to teachers' use of computers and the Internet are whether they have access to the Internet in their classrooms and the level of support they receive for the use of the Internet (Ronnkvist, Dexter, and Anderson 2000). This Issue Brief presents data from two surveys conducted through NCES' Fast Response Survey System (FRSS)—a 1999 survey of public school Internet access and a 1999 survey of public school teachers' use of computers and the Internet—to examine whether teachers who report having classroom access and support (as measured by both training and assistance for Internet use) are more likely to report using computers and the Internet for instruction during class time. This Issue Brief also examines teacher-reported school-level differences in support for Internet use and classroom access to the Internet.

Does universal school-level Internet access mean universal instructional use of the Internet?

In 1999, 95 percent of all public schools had Internet access (Williams 2000). This percentage did not vary by the concentration of poor students in the school. Despite similar school-level *access*, 63 percent of academic teachers in schools with the lowest enrollment of poor students (less than 11 percent of students eligible for free or reduced-price lunch) reported that they *used* computers or the Internet for instruction during class time, while 47 percent of teachers in schools with 50 to 70 percent of students eligible reported this use (Smerdon et al. 2000, 23).[1] Furthermore, 56 percent of teachers in schools with less than 6 percent minority enrollment used computers or the Internet for instruction, while 45 percent of teachers in schools with minority enrollment of 50 percent or more reported this use.[2]

What resources encourage increased use?

Overall, 53 percent of teachers reported classroom-level access to the Internet, 80 percent of teachers reported that training in use of the Internet was available to them, 75 percent of teachers reported that assistance in use of the Internet was available to them, and 43 percent of teachers reported having all three resources (table 2). Each of these resources was related to the likelihood that teachers also reported using the Internet for instruction. Sixty-five percent of teachers reporting classroom access to the Internet reported using computers or the Internet for instruction during class time, compared with 38 percent of teachers reporting no classroom access (table 1). Similarly, 56 percent of teachers who reported that training was available to them from their state, district, or school in the use of the Internet reported using computers or the Internet for instruction during class time, compared with 43 percent of teachers who said training was not available and 34 percent of those who did not know. Fifty-six percent of teachers reporting availability of technical assistance for using the Internet reported using computers or the Internet for instruction during class time, compared with 42 percent of teachers who said assistance was not available.

Teachers were most likely to use the Internet for instruction during class time when they reported that both classroom-

Table 1.—Percent of public school teachers reporting use of computers or the Internet for instruction during class time, by the availability of resources: 1999	
Availability of resources	Teachers reporting instructional use of computers or the Internet during class time
All public schools	**52**
Classroom-level access to the Internet	
Access	65
No access	38
Training in use of Internet	
Training available	56
Training not available	43
Don't know if training is available	34
Assistance in use of Internet	
Assistance available	56
Assistance not available	42

NOTE: Teachers who reported that the Internet was not available to them anywhere in the school were excluded from the analyses presented in this table.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Public School Teachers Use of Computers and the Internet," FRSS 70, 1999.

NCES 2002–029

level access and support in the form of training and assistance were available to them. Sixty-eight percent of teachers reporting classroom access to the Internet *and* the availability of training and assistance for using the Internet reported using computers or the Internet for instruction during class time, compared with 52 percent of teachers who reported classroom access but not training and assistance, 40 percent of those who reported training and assistance but no classroom access, and 37 percent of those who reported neither classroom access nor training and assistance (figure 1).

Are some teachers more likely than others to use the Internet when they have classroom access and support?

Among teachers who reported classroom Internet access and the availability of training and assistance for the Internet, the school-level disparities in reported use discussed earlier no longer appear. Of teachers reporting classroom Internet access and the availability of training and assistance for the Internet, 68 percent reported the use of computers or the Internet for instruction during class time (figure 1). No statistically significant differences based on school poverty concentration or school minority enrollment were found (data not shown).

What school characteristics are related to the presence of classroom Internet access and support?

Generally, teachers in schools with high enrollment of poor students were less likely to report classroom Internet access and the availability of training and assistance in the use of the Internet. Teachers in schools with 50 percent or more of

students eligible for free or reduced-price lunch were less likely than teachers in schools with 11 to 30 percent of students eligible to report that the Internet was available in their classroom, and they were less likely than teachers in schools with less than 50 percent of students eligible to report that training in the use of the Internet was available (table 2). Teachers in schools with more than 70 percent of students eligible for free or reduced-price lunch were less likely than teachers in schools with less than 50 percent of students eligible to report that assistance in the use of the Internet was available.

Overall, half or less of all teachers reported the availability of all three resources—classroom Internet access, and training and assistance for Internet use (table 2). Differences in classroom access, training, and assistance existed by the level of minority enrollment in a teacher's school. Teachers in schools with minority enrollment of 50 percent or more were less likely than those in schools with less than 50 percent minority enrollment to report having a combination of all three resources—classroom Internet access, training in the use of the Internet, and assistance in the use of the Internet— as well as having each resource individually.

Conclusion

Classroom-level access to the Internet and support in the form of training and assistance appear to be important factors in instructional use of the Internet during class time. Half or less of teachers reported that all three resources were available, and of these teachers, about two-thirds indicated that they used computers or the Internet for instruction during class time. Furthermore, among teachers who reported having all of these resources, the percentage reporting instructional use of computers or the Internet during class

Figure 1.—Percentage of teachers reporting use of computers or the Internet for instruction during class time, by availability of resources: 1999
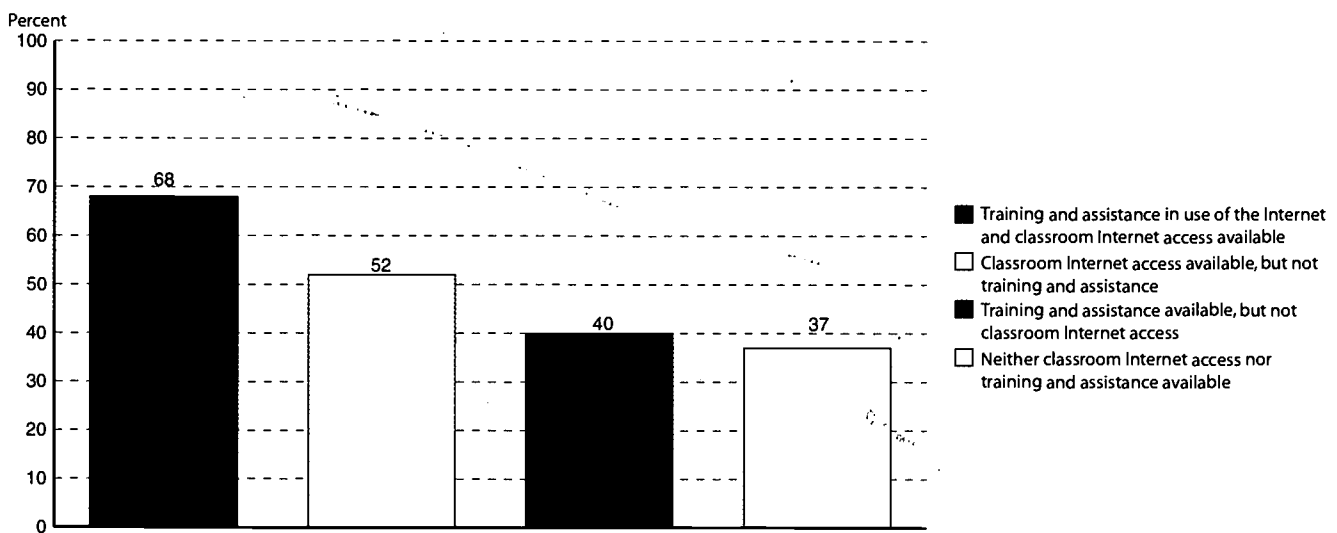
NOTE: For this figure, the training and assistance variables were combined into one dichotomous variable that indicated whether or not both training and assistance were available. Teachers who reported that the Internet was not available to them anywhere in the school were excluded from the analyses presented in this figure.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Public School Teachers Use of Computers and the Internet," FRSS 70, 1999.

Table 2.—Percent of public school teachers reporting the availability of various Internet-related resources, by selected school characteristics: 1999

School characteristics	Teachers reporting the availability of resources:			
	Classroom-level access to the Internet	Training in use of the Internet	Assistance in use of the Internet	Training and assistance in use of the Internet, and classroom-level access to the Internet
All public schools	**53**	**80**	**75**	**43**
Percent of students eligible for free or reduced-price school lunch				
Less than 11 percent	57	90	82	48
11–30 percent	60	85	79	49
31–49 percent	56	86	79	44
50–70 percent	44	72	72	33
71 percent or more	44	67	62	36
Percent minority enrollment				
Less than 6 percent	58	82	76	46
6–20 percent	61	87	79	50
21–49 percent	55	83	81	44
50 percent or more	40	70	65	31

NOTE: Teachers who reported that the Internet was not available to them anywhere in the school were excluded from the analyses presented in this table.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Public School Teachers Use of Computers and the Internet," FRSS 70, 1999.

time did not vary by the proportion of poor and minority students at these teachers' schools. However, teachers in schools with high enrollments of poor and minority students were generally less likely to report the availability of these resources.

The rapid pace of change in the world of education technology necessitates the further collection of data. In the year after these data were collected alone, the proportion of instructional rooms with internet access in U.S. public schools rose, from 64 percent in 1999 to 77 percent in 2000 (Cattagni and Farris 2001). In addition, there is much more to be learned about teachers' instructional use of technology. Data on digital content used in classrooms, online assessments, the quality and duration of instances of instructional use of technology, and other areas would further our ability to understand how technology is changing the nation's classrooms. Other NCES survey programs, such as the Schools and Staffing Survey and the National Assessment of Educational Progress, will be publishing more data on teachers' use of technology in the next few years.

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[1] As was the case in the Smerdon et al. analyses, the remainder of this report focuses on teachers in schools with Internet access.

[2] The relationship between poverty concentration and minority enrollment should be considered when interpreting data presented in this report; schools with a high minority enrollment were also more likely to have a high poverty concentration.

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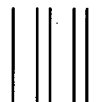The Issue Brief series presents information on education topics of current interest.

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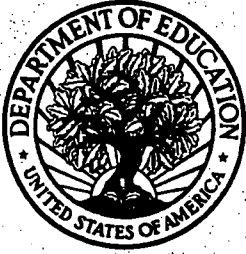Instructional Use of Technology

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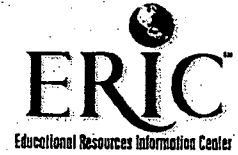BEST COPY AVAILABLE

6