PLANNING AND EVALUATION SERVICE

E-Rate and American Indian–Serving Schools

Who Applies and Who Gets Funded?

2001

Prepared for:

U. S. Department of Education
Planning and Evaluation Service
Washington, D.C.

Prepared by:

The Urban Institute
Washington, D.C.

This report was prepared for the U. S. Department of Education by the Urban Institute, under Purchase Order -00-PO-4689. The views expressed herein are those of the contractor. No official endorsement by the U. S. Department of Education is intended or should be inferred.

U. S. Department of Education
Richard W. Riley
Secretary

Office of the Under Secretary
Judith A. Winston
Under Secretary (A)

Planning and Evaluation Service
Alan L. Ginsburg
Director

Elementary and Secondary Education Division
Ricky T. Takai
Director

January 2001

E-Rate and American Indian–Serving Schools
Who Applies and Who Gets Funded?

By

Duncan D. Chaplin

The Urban Institute
2100 M St. NW
Washington, D.C. 20037-1207

January 18, 2001

This report was prepared for the U.S. Department of Education. The project monitor was Jeffery Rodamar. Any opinions, observations, findings, conclusions, and recommendations expressed in this report are those of the author and do not necessarily reflect the views of the U.S. Department of Education or the Urban Institute.

Acknowledgments

The author would like to thank a number of individuals whose assistance was invaluable to this effort. Jeffery Rodamar, of the Planning and Evaluation Service at the U.S. Department of Education, provided important information, insights, and overall guidance. Linda Roberts and Carole Wacey, with the Office of Educational Technology at the U.S. Department of Education, also assisted greatly in these areas.

This project would not have been possible without the cooperation and assistance of the Schools and Libraries Division of the Universal Service Administrative Company, which provided the administrative data used in this analysis. Similarly, I would like to thank Peter Camp at the Bureau of Indian Affairs, who provided a complete list of BIA schools and quick answers to many inquiries.

Finally, I would like to thank several of my colleagues at the Urban Institute for their tireless help: Kristen Olson, Dulari Tahbildar, Latasha Holloway, Alissa Anderson, David Perry, and Michael Puma.

All errors, however, are the responsibility of the author.

Table of Contents

Executive Summary

The Universal Service Fund for Schools and Libraries, commonly referred to as the E-Rate program, is a federal initiative designed to help provide Internet access to schools. In this report, we analyze how participation in the E-Rate program by public schools varies with the fraction of students who are American Indians, particularly for schools run by the Bureau of Indian Affairs (BIA). We use administrative data covering the 1st and 2nd years of the program. This study finds that:

Most non-BIA schools serving American Indians applied for the E-Rate program. The application rates vary from a high of over 80 percent for schools with 0-2 percent American Indian enrollment to a low around 60 percent for schools with 50-80 percent American Indians. Interestingly, schools with no American Indian students were in between, with application rates around 75 percent.

Size Matters: While application rates generally increase with the size of the school, the participation rates of non-BIA schools with over 80 percent American Indian enrollment were not as clearly related to school size.

BIA schools greatly increased their E-Rate use between Years 1 and 2. Although the application rate of BIA schools was very low in the first year of the E-Rate program (at only 35 percent), by the second year the BIA schools had the highest application rate of any group of schools analyzed (at over 95 percent), and received more than three times the national average in per student funding commitments. Total commitments to BIA schools rose by a factor of 20, from only $300,000 in Year 1 to over $6 million in Year 2.

All BIA applicants were funded. All BIA schools that applied received at least some funding in both years of the program, in comparison to about 98 percent of all schools that applied.

BIA schools had high application rates compared to similar schools in Year 2. BIA application rates for the E-Rate program are higher than other schools with similar levels of poverty and urban location, which are the factors that determine the E-Rate discount rate. The BIA schools also had much higher application rates than other schools with 100 percent American Indian enrollment.

Introduction

The Universal Service Fund for Schools and Libraries, commonly referred to as the E-Rate program, is a federal initiative that provides discounts on the cost of telecommunications services and equipment to all public and private schools and libraries. This report analyzes participation in the E-Rate program for schools serving American Indians, with a particular focus on schools that are run by the Bureau of Indian Affairs (BIA). Many American Indians live in poverty and in remote rural locations with little access to affordable modern telecommunications. For this reason, they are likely to be left behind technologically and become part of what is often referred to as the "Digital Divide." By helping to provide access to the Internet and on-line learning resources**,** the E-Rate program may help to offset this problem. The BIA can also help, in part by providing the organizational capacity needed to successfully apply for E-Rate funds. In this report we analyze administrative records on all E-Rate applicants during the first two years of the program.

The Potential of E-Learning

A major goal of the E-Rate program is to increase the opportunities for schools to use e-learning (Internet-related technology for education). The potential of e-learning to improve education is the major focus of a recent report to the president and Congress of the United States (The Web-Based Education Commission, 2000) and the national educational technology plan (The U.S. Department of Education, 2000). The Commission report notes that Internet technology can help expand the range of educational opportunities available, allow for more individualized instruction, extend the learning day, reduce the cost of lifelong learning, improve professional development of teachers, and provide more compelling and up-to-date content to students of all ages. There are concerns related to privacy, unacceptable content available for children, and a lack of currently available research on how to best use technology in education. Nevertheless, the commission recommends moving forward to "make powerful new Internet

resources … widely and equitably available for all learners." With about $2 billion in annual funding, the E-Rate program is the largest federal initiative designed to accomplish this goal.

The E-Rate Program

The Universal Service Fund for Schools and Libraries—commonly known as the "E-Rate"—was created in 1996 as part of Public Law 104-104, the Telecommunications Act of 1996, to provide discounts on the cost of telecommunications services and equipment to all public and private schools and libraries. Eligible services range from basic local and long-distance phone services and Internet access, to the acquisition and installation of equipment to provide network wiring within school and library buildings. In general, however, computer hardware and software, staff training, and electrical upgrades are not covered. Nearly four billion dollars were committed to schools and libraries nationwide during the first two years of the program.[1]

Exhibit 1: E-Rate Discount by Poverty Concentration and Urban/Rural Location

Poverty (Percent Students Eligible for Free and Reduced-Price Meals)	Discount: Urban Location	Discount: Rural (Non-Urban) Location
Less than 1%	20%	25%
1% – 19%	40%	50%
20% – 34%	50%	60%
35% – 49%	60%	70%
50% – 74%	80%	80%
75% – 100%	90%	90%

As shown in exhibit 1**,** eligible schools and libraries may receive discounts ranging from 20 percent to 90 percent on eligible telecommunication services, depending on economic need and location (urban or rural). Economic need is based upon the percentage of students eligible for participation in the National School Lunch Program.[2]

---

[1] Year 1 covers the period from January 1998 through June 1999 and Year 2 goes from July 1999 through June 2000. Our data for Year 2 are incomplete as some applications are still being funded.

[2] This can be calculated using the data used in this report (the Common Core of Data) or other federally approved alternative mechanisms contained in the Elementary and Secondary Education Act (ESEA).

American Indians

American Indians face a number of challenges related to income and education that may limit their ability to take advantage of the educational potential of e-learning. In 1990, about 22 percent of American Indians were living in poverty, compared to only 10 percent of whites. Similarly, only 9 percent of American Indians over the age of 25 had a college degree, compared to 22 percent of whites.[3] These difficulties are compounded by the remote rural locations of schools attended by many American Indians.[4]

The U.S. government has a number of initiatives designed to assist American Indians. The Bureau of Indian Affairs (BIA) is a federal government agency within the U.S. Department of Interior. The BIA's mission is to promote the well-being of American Indians, Indian tribes, and Alaska natives. The Office of Indian Education Programs (OIEP) is one of the largest components of the BIA. As part of its general mission to improve the education of American Indians, OIEP has developed the Access Native America Network. This network holds conferences that focus on encouraging BIA schools to share their technology applications, accomplishments, and lessons learned.[5]

An even more direct connection between BIA and the E-Rate program was proposed by the Clinton/Gore administration. In 1998, President Clinton commissioned a Department of Commerce study to assess the current state of technology infrastructure in Native American Indian communities, identify and describe the challenges and barriers to technology

---

[3] Tables 49 and 52, U.S. Bureau of the Census (1995).

[4] Based on our calculations using the data described below, over 90 percent of non-BIA public schools with majority American-Indian enrollment are in rural areas, compared to a national average of about 50 percent.

[5] According to the BIA Web site, OIEP directly served about 50,000 students in 185 schools in 23 states and 63 reservations during the 1998-99 school year. OIEP also serves another 400,000 students through other educational programs. In our analyses, we use only the list of 175 BIA schools provided to us by BIA.

infrastructure development, and propose solutions for overcoming them. The study recommended that the federal government take the lead in helping American Indian and Alaska Native communities gain better access to new information technologies, and the Administration accordingly asked BIA to make the E-Rate program a priority and work directly with each BIA school. In fact Vice President Gore publicly asked BIA to make it a priority in an event a couple years ago at the White House.

Related programs that also help American Indians access the Internet include The Native American Distance Education Community which provides information and services related to distance education to Native Americans. Similarly, the Countdown to Supercomputing ® is designed to teach Native American high school students from Bureau of Indian Affairs (BIA) schools to use the Internet for deepening their knowledge of advanced scientific concepts such as fractals, virtual reality, and environmental supercomputing.

Formative Evaluation of the E-Rate Program

This report and a companion piece on schools in Empowerment Zones and Enterprise Communities (Chaplin 2001) follow up on an earlier formative report on the E-Rate program (Puma et al. 2000). The earlier report is part of a new initiative, funded by the Department of Education, intended to expand our knowledge of how technology is changing American education.[6] All three of these reports are based on an analysis of E-Rate administrative records covering the first two years of program operation. These records were linked to detailed national data on all public and private schools and libraries in the United States (a combined

---

The remaining 10 schools are "dormitories" within schools that are not eligible to apply for E-Rate funds on their own.

[6] The multi-year Integrated Studies of Educational Technology (ISET) is being funded by the U.S. Department of Education's Planning and Evaluation Service (PES) and Office of Elementary and Secondary Education (OESE) as part of the continuing evaluation of Technology Literacy Challenge Fund (TLCF). ISET is being conducted in collaboration with the Department's Office of Educational Technology (OET) and the Schools and Libraries Division (SLD) of the Universal Service Administrative Corporation, which, under the direction of the Federal Communications Commission, administers the E-Rate program.

total of nearly one million records). A detailed discussion of these data and how they were merged can be found in Puma et al. (2000).[7]

BIA Data

The data used in our original report (Puma et al. 2000) did not cover BIA schools well. This is because data on BIA schools was generally missing in the 1997-1998 Common Core of Data (CCD), which we used to create our universes of public schools and public school districts. In order to obtain a more complete list of BIA schools, we have augmented the original data by merging in data from BIA and the 1998-1999 Common Core of Data on BIA schools.[8]

Findings

In this report we compare schools based on the fraction of students who are American Indian and based on whether or not the school is sponsored by the BIA.[9]

Table 1

As table 1 shows, about 7.5 percent of American-Indian students attend BIA schools. These schools comprise 0.2 percent of all schools, but enroll only 0.1 percent of all students. Non-BIA schools with 100 percent American-Indian enrollment enroll another 2.3 percent of American-Indian students. About 70 percent of American-Indian students are in schools where less than half of the students are American Indian. In addition, almost half of all U.S. public

---

[7] The data were merged based on the names and addresses of the applicants.

[8] BIA provided us with data on free lunch membership and the 1998-1999 CCD data contained information on rural location. Both sources had total enrollment. The original data identified some BIA schools as being under the jurisdiction of the BIA in Washington, D.C. These were removed before adding in the new data to avoid double counting.

[9] All BIA schools have 100 percent American Indian enrollment.

schools have no American-Indian students, though these schools enroll only about 37 percent of all students.

In the fourth and fifth columns of table 1, and in figure 1, we present E-Rate application rates. Among non-BIA schools, those with between 0 and 2 percent American-Indian students had the highest application rates in both Year 1 and Year 2 (81 and 84 percent, respectively). Schools with no American Indians had somewhat lower rates (73 and 77 percent). All other non-BIA schools had lower application rates in both Years 1 and 2. Schools whose enrollment was between 2 to 10 percent American Indian had the next highest rates among non-BIA schools with American Indians (71 and 74 percent), while schools with 50 to 80 percent American-Indian students had the lowest application rates (60 and 61 percent).

A major factor to note is that most non-BIA schools apply for E-Rate, regardless of the fraction of students who are American Indian. In addition, there are individual success stories that are quite impressive, even in non-BIA schools with high American-Indian enrollment. For instance, the Gallup McKinley County Schools in New Mexico have a large percentage of American-Indian students since they cover a large portion of the Navajo reservation in New Mexico. Gallup did not receive funding in Year 1 but was funded for over $15 million in Year 2 of the program, although Gallup is not a large district and parts of the district did not have phone service when the district applied. Similarly, Central Consolidated School District, another district in New Mexico with a large American-Indian enrollment rate, was successful in applying for the E-Rate program.[10] It would be interesting to investigate what factors made these particular districts successful in applying for the E-Rate program.

From Year 1 to Year 2, application rates rose moderately for all categories of non-BIA schools included in table 1. In contrast, the application rate by BIA schools rose dramatically, starting significantly below the rates for other types of schools in Year 1, at only 35 percent, and rising

[10] We thank Catriona Ayer at SLD for providing these illustrative anecdotes.

to far above that of any category of non-BIA school in Year 2, at 95 percent. In sum, while non-BIA schools with large fractions of American Indians had relatively low E-Rate application rates and BIA schools had the lowest application rates in the first year of the program, BIA schools had by far the highest application rates in Year 2.

The last two columns in table 1 present funding rates, or the rate of having funds committed given that a school applied for the E-Rate program. Almost all applicants get some funding.[11] The lowest rates in Year 1 and 2 are 96 percent; the BIA schools had 100 percent funding rates in Year 1 and Year 2 of the program.

To summarize, most of the public schools with large fractions of American Indians applied for the E-Rate program in its first and second years, but the application rates were very low in BIA schools in the first year. By the second year, however, the BIA schools had the highest application rate.

Tables 2 and 3

The level of funding available from the E-Rate program depends heavily on the poverty level of a school and, to some degree, on rural location. For this reason, some of the patterns found in table 1 may be related to differences in poverty and rural location. We investigate this possibility in tables 2 and 3 by looking at differences in E-Rate application rates by the percentage of American-Indian students among schools eligible for the same E-Rate funding levels.[12]

In tables 2 and 3, there are over 100 categories of schools based on poverty, urban location, and percentage of American-Indian students. Some of these categories have no schools and

[11] Many applicants submitted multiple applications, some of which were turned down.

[12] These are not exact because schools could use alternative measures of poverty to determine their E-Rate discount rate and did use a slightly different definition of rural location. These are discussed in Puma et al. (2000).

many have fewer than five schools. In order to avoid giving too much attention to the categories with fewer than five schools, we have omitted them from tables 2 and 3.[13]

The BIA schools in table 2 had by far the lowest application rates in Year 1, at around 40 percent.[14] This pattern holds overall and when BIA schools are compared only to schools with similar levels of poverty and rural location. Rural high-poverty non-BIA schools with American-Indian enrollment of 2 to 50 also had low E-Rate application rates (under 50 percent), as did those with 50 to 75 percent of students in poverty and 50 to 80 percent American-Indian enrollment. The lowest application rates shown in table 2, however, are for low-poverty (under 1 percent) schools with less than 50 percent American-Indian enrollment.

Similar patterns hold in Year 2. In addition, application rates rose, except in low-poverty rural schools. The most dramatic increase was for BIA schools, where the rates went from around 40 percent to about 100 percent in both rural and urban schools in which over 75 percent of students eligible for free lunch, and to about 70 percent in rural schools in which 50 to 75 percent of students were eligible for free lunch.

Among non-BIA schools, E-Rate application rates vary with the fraction of American-Indian students at the schools. Non-BIA schools with no American Indians and those whose enrollment was more than 50 percent American Indian had application rates that were generally average or above average, given their poverty levels. For the remaining schools, the fraction of schools applying to E-Rate generally decreases as the percentage of American-Indian students in the schools increases. These patterns held in both Years 1 and 2.

---

[13] For confidentiality reasons, we also have to avoid providing information that might identify whether individual schools applied for the program and were turned down. No categories of schools with less than 50 percent American-Indian enrollment were omitted. All 21 of the remaining non-BIA schools in urban areas, 3 of the 31 BIA schools in urban areas, and about 2 percent of the remaining schools in urban areas are omitted. These omissions do not affect our conclusions, as these schools are included in table 1 and in the totals in tables 2 and 3.

[14] The overall rate for BIA schools in table 2 differs from that in table 1 because of missing values.

To summarize, tables 2 and 3 show that the results in table 1 hold true even when we compare schools with similar levels of poverty and location (urban versus rural). Schools with high fractions of American Indians are taking advantage of the E-Rate program at rates generally similar to those of schools with fewer American Indians. In addition, BIA schools had low application rates in Year 1 and high application rates in Year 2, even when compared to schools eligible for similar levels of funding.

These results suggest that the BIA did have a positive effect on E-Rate application rates in Year 2. There is at least one possible alternative explanation. It could be the case that the BIA schools had higher poverty rates than reported in the CCD relative to non-BIA schools, and were, therefore, eligible for more funding, even after controlling for poverty, as measured in the CCD. This is a plausible explanation for schools with less than 75 percent of their students on free lunch, but would not explain the results for schools in the highest poverty category, since having more than 75 percent poverty would not increase the school's E-Rate discount rate. As shown in Tables 2 and 3, the application rate differences between BIA and non-BIA schools are positive only for the highest poverty rate category in Year 2. Thus, this pattern could not be explained by a weak measure of poverty at the school level.

Table 4

Tables 1 through 3 describe application rates for any type of service. In Table 4 we break down our numbers based on the type of service applied for to see if the patterns differ depending on the type of service. The E-Rate administrative data include information about three categories of spending: Telecomm and Dedicated Services, Internet Access, and Internal Connections. Telecomm and Dedicated Services refers to phone services, Internet Access refers to Internet services, and Internal Connections refers to the costs of wiring and related equipment. Table 4 illustrates how E-Rate program funds were divided among these three categories in Years 1 and 2 of the program.

Data constraints made it impossible for us to determine type of funding by school, but we were able to identify type of funding by application.[15] Therefore, in table 4 we compare total funds committed by service type going to applications by BIA, to non-BIA applications that included BIA schools, and to all other applications with no BIA schools.

As shown in table 4, total E-Rate funding commitments to school districts (including the BIA districts) increased between Year 1 and 2 of the program from $1.7 billion to $2.0 billion, or by about 14 percent. E-Rate commitments to the BIA increased by far more, however, going from only about $300,000 to over $6 billion, a nearly 20-fold increase. At the same time, other applications with BIA schools experienced a $1.6 billion drop, going from about $1.9 billion to only $300,000. This suggests that BIA greatly stepped up its involvement in the E-Rate program between Year 1 and Year 2. Indeed, BIA staff told us that while they applied on behalf of few BIA schools during the first year of the program, they applied on behalf of all BIA schools in the second year.[16]

In Year 1, the BIA received funding commitments only for Internal Connections; in Year 2, about three-quarters of their funding commitments were for Internal Connections. In comparison, other applications only received about 50 to 60 percent of their commitments for Internal Connections. Among applications with no BIA schools, the fraction of funds going to Internal Connections also increased between Years 1 and 2, going from 53 to 63 percent. This may be in part because SLD was able to fund all applications for Internal Connections in Year 2 while they were only able to fund applications for Internal Connections for some applicants in

[15] The data enable us to identify the types of funding going to each applicant, usually a school district, but not the funding going to each school unless the school applied on its own. See Puma et al. (2000) for more details.

[16] This information is based on e-mail communications with Peter Camp at BIA. Our estimate of a 95 percent application rate in Year 2 instead of 100% is probably due to problems in matching the BIA records to the E-Rate records. It appears that some BIA schools that had applied on their own (or with others) in Year 1 joined up with BIA in Year 2, though this would only explain about $1.6 of the $5.7 billion increase in funding experienced by the BIA.

Year 1.[17] Applications for Internal Connections may decrease in later years, once districts have finished wiring their schools.

About 40 percent of committed funds for non-BIA applications (with and without BIA schools) went to Telecomm and Dedicated Services in Year 1; this decreased somewhat to between 30 and 35 percent in Year 2. Committed funds for Internet Access were under 10 percent for all groups in both years, reflecting the low cost of these services.

The numbers in table 4 also enable us to estimate funding commitments per student in BIA schools. The data suggest that in Year 2, BIA schools received $142 per student in funding commitments, compared to an average of $42 per student in public schools nationwide and $108 per student in high-poverty school districts (Puma et al. 2000).[18] Thus, the BIA schools did receive a high level of funding commitments, even when compared with high-poverty public school districts.

Table 5

Another explanation for the low application rates of BIA schools in Year 1 might be their small size, which has been shown to be highly correlated with application rates (Puma et al. 2000).[19] To analyze this, Table 5 presents E-Rate application rates (as of January 2000) by school size, BIA status, year, and percentage of students who are American Indian. The application rates of BIA schools are low in Year 1 even when compared to schools of similar size. Even the largest BIA schools (with 300 to 1,000 students) have a 37 percent application rate, compared to an overall rate of 83 percent for schools in this size category.

---

[17] More precisely, in Year 1, because of funding constraints, they were only able to pay for Internal Connections for applicants with a discount rate of 70 percent or above.

[18] These estimates are based only on funds that were applied for directly by the BIA and public school districts, and do not include any funds received indirectly as part of consortia applications.

[19] Only 37 percent of the BIA schools serve over 300 students in comparison to 70 percent of all schools.

As found by Puma et al. (2000), application rates generally rise with school size. This holds until we look at schools with over 80 percent American-Indian student populations or at BIA schools. For instance, overall application rates rise from 50 percent in the smallest schools to 83 percent in the largest schools. However, in schools with enrollments of 80 to 97 percent American-Indian students, the rates decrease from 73 percent in the smallest schools to 53 percent in the middle range (schools with 150 to 300 students) but then increase back to 68 percent for schools with 300 to 1,000 students. Among schools with enrollments of 97 to 100 percent American-Indian students, 70 percent of very small schools applied, compared to only 50 percent of schools with 300 to 1,000 students. Similarly, the highest application rate in BIA schools is 43 percent for the moderately sized schools (with 150 to 300 students). The larger and smaller schools had rates around 36 to 37 percent. This unclear association between school size and application rates among schools with large fractions of American Indians may be related to small numbers of schools in some of these categories, though we do omit categories with fewer than five schools.

The lower panel of Table 5 shows that the high application rates of BIA schools in Year 2 are found for all sizes of schools. In addition, we continue to see application rates generally rising with size, though the pattern is once again less clear for the schools with large fractions of American Indians.

To summarize, the E-Rate application rates of BIA schools remain low in Year 1 and high in Year 2 even when compared to schools of similar size. In addition, while application rates generally increase with size, the pattern is less clear for schools with high fractions of American-Indian students.

Conclusion

This report examines the E-Rate application rates of schools serving American-Indian students, particularly BIA schools. We find a number of interesting patterns. First, E-Rate application rates generally fall among non-BIA schools as the percentage of American-Indian students increases. On the other hand, most schools with large fractions of American Indians applied for the program in both years.

Second, the application rate of BIA schools started much lower than that of other schools, and rose to be much higher. In Year 1, only 35 percent of BIA schools applied for the E-Rate program. Thus, it appears that they were somewhat slow in taking advantage of this initiative. In Year 2, however, over 90 percent of BIA schools applied. Thus, the BIA schools more than overcame their initial disadvantages in the second year of the program. The direct explanation for this extraordinary increase is the fact that the BIA applied on behalf of all of these schools in the second year of the program.[20]

By applying on behalf of the BIA schools, the BIA is acting, in effect, like a large school district. Benefits and costs of large school districts are discussed in recent work by Hannaway and Kimball (1999). Their results suggest that larger districts may have greater organizational capacity than smaller districts[21] because of factors such as economies of scale and a related ability to specialize. At the same time, the larger districts might not be as quick to respond to change as smaller districts because of problems related to regulations and bureaucracy. As noted earlier, BIA applied on behalf of only a few schools in Year 1 and all schools in Year 2.

---

[20] We show only a 95 percent application rate because of problems matching all of the schools based on their names.

[21] This is consistent with the patterns noted by Hannaway and Kimball. In particular, they report that larger districts report greater progress on standards based reform than smaller districts. Similarly, we find that larger schools generally have higher E-Rate application rates than smaller schools.

To summarize, most schools that serve large fractions of American Indians did apply for the E-Rate program, although at rates somewhat lower than schools serving fewer American Indians. In addition, while BIA schools had very low application rates during the first year of the E-Rate program, they had the highest rates in the second year and received over three times the national average in per student funding commitments. Thus, the E-Rate program and the Bureau of Indian Affairs appear to be helping to provide American-Indian students with improved opportunities to take advantage of the potential benefits of e-learning and, thereby, to reduce the current economic and educational deficits in their communities.

References

Chaplin, Duncan. 2001. *Empowerment Zones and E-Rate Application Rates*. Washington, D.C.: The Urban Institute and The U. S. Department of Education, Office of the Under Secretary, Planning and Evaluation Service, Elementary and Secondary Education Division.

Hannaway, Jane, and Kristi Kimball. 1999. "Big Isn't Always Bad: School District Size, Poverty, and Standards-Based Reform," Washington, D.C.: The Urban Institute and The U.S. Department of Education.

Puma, Michael, Duncan Chaplin, and Andreas Pape. 2000. *E-Rate and the Digital Divide: A Preliminary Analysis from the Integrated Studies of Educational Technology*. Washington, D.C.: The Urban Institute and The U. S. Department of Education, Office of the Under Secretary, Planning and Evaluation Service, Elementary and Secondary Education Division.

The Web-Based Education Commission. 2000. *The Power of the Internet for Learning: Moving from Promise to Practice: Report of the Web-Based Education Commission to the President and the Congress of the United States*. Washington, D.C. http://www.ed.gov/offices/AC/WBEC/FinalReport/index.html.

U.S. Bureau of the Census. 1995. *Statistical Abstract of the United States: 1995, 115th Edition*. Washington, D.C.: Government Printing Office.

U.S. Department of Education. 2000. *e-Learning: Putting a World-Class Education at the Fingertips of All Children: The National Educational Technology Plan*. Washington, D.C.: Office of Educational Technology.

Appendix: Tables and Figure

Table 1
E-Rate Application and Funding Rates
by BIA Status
Public Schools

	National Totals % of Total			E-Rate Applications Percentages of Schools			
				Applying		Funded if Applied	
BIA Status	Schools 92,453	Native American Students 563,379	All Students 46,817,214	Year 1	Year 2	Year 1	Year 2
Non-BIA by Percent American Indian							
Missing Data	4.0%	0.0%	0.6%	32%	32%	96%	98%
0 %	47.1%	0.0%	37.4%	73%	77%	98%	98%
> 0 to 2 %	38.7%	22.8%	54.4%	81%	84%	97%	98%
> 2 to 10 %	6.8%	19.5%	5.8%	71%	74%	97%	97%
> 10 to 50 %	2.5%	26.0%	1.5%	62%	67%	98%	96%
> 50 to 80 %	0.3%	7.6%	0.1%	60%	61%	99%	98%
> 80 to 97 %	0.2%	6.2%	0.1%	68%	71%	100%	98%
> 97 to < 100 %	0.2%	8.2%	0.1%	67%	73%	100%	97%
100 %	0.1%	2.3%	0.0%	65%	71%	100%	99%
BIA Schools	0.2%	7.5%	0.1%	35%	95%	100%	100%
Total	100%	100%	100%	74%	78%	98%	98%

NOTES:
(1) This table is based on funding applications made by January 4, 2000.
(2) Schools are counted as applying if they applied directly (as a billed entity) or indirectly (as part of a district or consortia).
(3) Percentages of schools funded are out of those that applied.
(4) Totals do not always match across tables because of missing values for the variables urban location, size, fraction minority, and poverty.

DATA SOURCES:
E-Rate application information from the Schools and Libraries Division of the Universal Service Administrative Company.
Non-BIA School data comes from the U.S. Department of Education's National Center for Education Statistics, CCD for 1997-1998.
BIA School data comes from the U.S. Department of Education's National Center for Education Statistics, CCD for 1998-1999
and the Bureau of Indian Affairs.

Table 2
E-Rate Application Rates by Poverty, Urban Location and BIA Status
Public Schools
Year 1

	% of Students Eligible for Free Lunch	Non-BIA Schools by percent American Indian								BIA Schools	Total
		0 %	> 0 to 2 %	> 2 to 10 %	> 10 to 50 %	> 50 to 80 %	> 80 to 97 %	> 97 to < 100 %	100 %		
Urban	< 1 %	43%	56%	36%	30%	.	.	.	.	.	46%
	1 to < 20 %	78%	81%	71%	56%	.	.	.	.	.	79%
	20 to < 35 %	83%	83%	78%	71%	.	.	.	.	.	82%
	35 to < 50 %	82%	83%	84%	64%	.	.	.	.	.	82%
	50 to < 75 %	82%	82%	79%	75%	.	.	.	.	.	82%
	75 % or More	84%	86%	78%	73%	.	.	.	.	39%	84%
Rural	< 1 %	31%	57%	39%	50%	58%	83%	86%	64%	.	37%
	1 to < 20 %	77%	78%	68%	67%	.	.	.	.	.	77%
	20 to < 35 %	78%	80%	70%	67%	67%	.	.	.	.	77%
	35 to < 50 %	80%	82%	67%	63%	53%	67%	.	.	.	78%
	50 to < 75 %	83%	83%	62%	54%	49%	60%	77%	63%	38%	77%
	75 % or More	78%	76%	49%	49%	59%	70%	64%	68%	41%	72%
Total		76%	81%	70%	61%	54%	67%	72%	67%	40%	77%

NOTES:
(1) This table is based on funding applications made by January 4, 2000.
(2) Schools are counted as applying if they applied directly (as a billed entity) or indirectly (as part of a district or consortia).
(3) A "." indicates fewer than 5 observations in that cell.
(4) Totals do not always match across tables because of missing values for the variables urban location, size, fraction minority, and poverty.
(5) Urban refers to City or Suburban and Rural includes Small Town.

DATA SOURCES:
E-Rate application information from the Schools and Libraries Division of the Universal Service Administrative Company.
Non-BIA School data comes from the U.S. Department of Education's National Center for Education Statistics, CCD for 1997-1998.
BIA School data comes from the U.S. Department of Education's National Center for Education Statistics, CCD for 1998-1999
and the Bureau of Indian Affairs.

The Urban Institute

Table 3
E-Rate Application Rates by Poverty, Urban Location and BIA Status
Public Schools
Year 2

	% of Students Eligible for Free Lunch	Non-BIA Schools by percent American Indian								BIA Schools	Total
		0 %	> 0 to 2 %	> 2 to 10 %	> 10 to 50 %	> 50 to 80 %	> 80 to 97 %	> 97 to < 100 %	100 %		
Urban	< 1 %	46%	57%	43%	35%	.	.	.	.	.	49%
	1 to < 20 %	80%	83%	74%	84%	.	.	.	.	.	82%
	20 to < 35 %	84%	86%	79%	85%	.	.	.	.	.	84%
	35 to < 50 %	84%	85%	83%	67%	.	.	.	.	.	84%
	50 to < 75 %	85%	87%	84%	76%	.	.	.	.	.	86%
	75 % or More	87%	87%	83%	74%	.	.	.	.	100%	87%
Rural	< 1 %	32%	53%	40%	43%	45%	83%	100%	55%	.	37%
	1 to < 20 %	81%	82%	75%	75%	.	.	.	.	.	81%
	20 to < 35 %	82%	84%	74%	73%	77%	.	.	.	.	81%
	35 to < 50 %	83%	87%	70%	72%	63%	64%	.	.	.	82%
	50 to < 75 %	81%	87%	70%	68%	61%	67%	81%	75%	69%	80%
	75 % or More	80%	82%	57%	56%	60%	72%	63%	77%	98%	79%
Total		79%	84%	74%	68%	58%	72%	73%	74%	96%	80%

NOTES:
(1) This table is based on funding applications made by January 4, 2000.
(2) Schools are counted as applying if they applied directly (as a billed entity) or indirectly (as part of a district or consortia).
(3) A "." indicates fewer than 5 observations in that cell.
(4) Totals do not always match across tables because of missing values for the variables urban location, size, fraction minority, and poverty.
(5) Urban refers to City or Suburban and Rural includes Small Town.

DATA SOURCES:
E-Rate application information from the Schools and Libraries Division of the Universal Service Administrative Company.
Non-BIA School data comes from the U.S. Department of Education's National Center for Education Statistics, CCD for 1997-1998.
BIA School data comes from the U.S. Department of Education's National Center for Education Statistics, CCD for 1998-1999
and the Bureau of Indian Affairs.

The Urban Institute

Table 4
Committed Funds for the E-Rate Program
by Service Type, BIA Status, and Year
(Percent in Category)

Year	BIA Status	Telecomm and Dedicated Services	Internet Access	Internal Connections	Total
Year 1	BIA Applications	$0 (0%)	$0 (0%)	$305,721 (100%)	$305,721 (100%)
	Other Applications with BIA Schools	$743,268 (40%)	$36,842 (2%)	$1,078,056 (58%)	$1,858,166 (100%)
	Applications without BIA Schools	$673,541,426 (39%)	$132,135,953 (8%)	$914,322,339 (53%)	$1,719,995,533 (100%)
	Total	$674,284,694 (39%)	$132,172,795 (8%)	$915,706,117 (53%)	$1,722,159,420 (100%)
Year 2	BIA Applications	$1,178,234 (20%)	$311,126 (5%)	$4,522,620 (75%)	$6,011,981 (100%)
	Other Applications with BIA Schools	$105,090 (35%)	$26,653 (9%)	$170,721 (56%)	$302,463 (100%)
	Applications without BIA Schools	$584,822,337 (30%)	$145,754,701 (7%)	$1,217,875,094 (63%)	$1,948,452,133 (100%)
	Total	$586,105,661 (30%)	$146,092,480 (7%)	$1,222,568,435 (63%)	$1,954,766,577 (100%)

NOTES:
(1) This table is based on funding applications made by January 4, 2000.
(2) BIA applications are those made by the Bureau of Indian Affairs in Washington, D.C.

DATA SOURCES:
E-Rate application information from the Schools and Libraries Division of the Universal Service Administrative Company.
Non-BIA School data comes from the U.S. Department of Education's National Center for Education Statistics, CCD for 1997-1998.
BIA School data comes from the U.S. Department of Education's National Center for Education Statistics, CCD for 1998-1999 and the Bureau of Indian Affairs.

Table 5
E-Rate Application Rates by Size and
BIA Status and Year
Public Schools

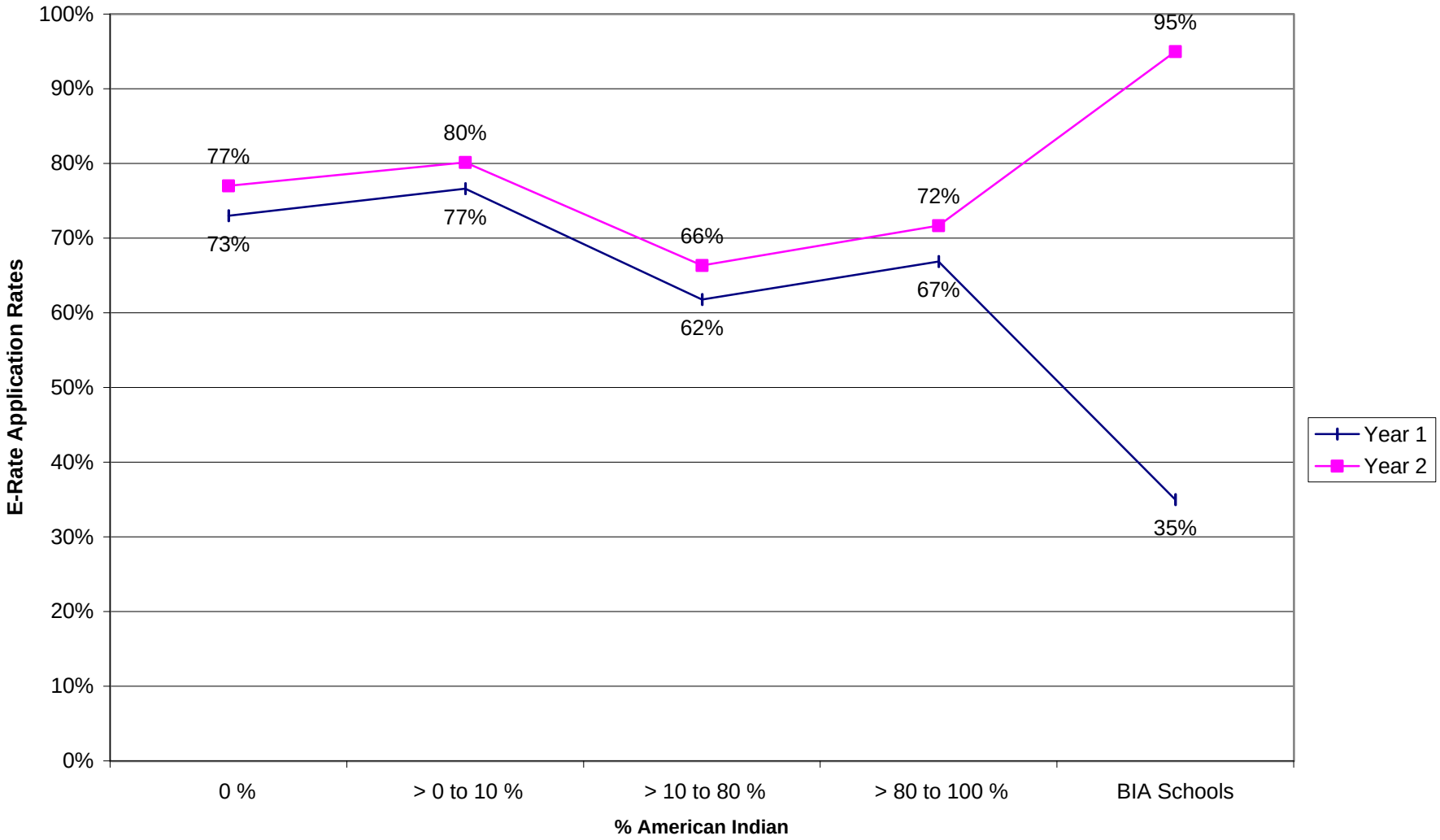
School Size	Non-BIA Schools by Percent American Indian								BIA Schools	Total
	0 %	> 0 to 2 %	> 2 to 10 %	> 10 to 50 %	> 50 to 80 %	> 80 to 97 %	> 97 to < 100 %	100 %		
Year 1										
0 - < 150	49%	58%	47%	45%	50%	73%	70%	64%	36%	50%
150 - < 300	79%	74%	68%	63%	58%	53%	88%	77%	43%	76%
300 - < 1000	86%	82%	81%	72%	58%	68%	50%	.	37%	83%
1000 or More	86%	83%	78%	77%	.	.	.	.	.	83%
Total	76%	81%	70%	61%	54%	67%	72%	67%	38%	77%
Year 2										
0 - < 150	53%	63%	57%	53%	55%	70%	69%	70%	97%	55%
150 - < 300	81%	79%	74%	71%	47%	71%	83%	92%	94%	80%
300 - < 1000	87%	86%	82%	80%	77%	84%	64%	.	94%	86%
1000 or More	86%	85%	78%	83%	.	.	.	.	.	85%
Total	79%	84%	74%	68%	58%	72%	73%	74%	95%	80%

NOTES:
(1) This table is based on funding applications made by January 4, 2000.
(2) Schools are counted as applying if they applied directly (as a billed entity) or indirectly (as part of a district or consortia).
(3) A "." indicates fewer than 5 observations in that cell.
(4) Totals do not always match across tables because of missing values for the variables urban location, size, fraction minority, and poverty.
(5) Urban refers to City or Suburban and Rural includes Small Town.

DATA SOURCES:
E-Rate application information from the Schools and Libraries Division of the Universal Service Administrative Company.
Non-BIA School data comes from the U.S. Department of Education's National Center for Education Statistics, CCD for 1997-1998.
BIA School data comes from the U.S. Department of Education's National Center for Education Statistics, CCD for 1998-1999
and the Bureau of Indian Affairs.

The Urban Institute

Figure 1: E-Rate Application Rates in Year 1 and Year 2 by BIA Status and Percent of American Indian Students, Public Schools



NOTES: This figure is based on funding applications made by January 4, 2000. Schools are counted as applying if they applied directly (as a billed entity) or indirectly (as part of a district or consortia).

DATA SOURCES: E-Rate application information from the Schools and Libraries Division of the Universal Service Administrative Company. Non-BIA School data comes from the U.S. Department of Education's National Center for Education Statistics, CCD for 1997-1998. BIA School data comes from the U.S. Department of Education's National Center for Education Statistics, CCD for 1998-1999 and the Bureau of Indian Affairs.