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This article examines important questions related to the use of computer technology in Catholic schools. Under consideration are issues related to how teachers use the Internet in classrooms, communicate with parents, and design lessons with technological support. Differences in computer use between high-poverty and low-poverty schools are also examined.

Over the past 2 decades the use of technology has become the norm within American society and has emerged in classrooms throughout the country, but not always equitably. The term digital divide began as a phrase to indicate a gap between those with access to technology and those without access. For the purposes of this study, the researchers define the digital divide as

> the gap in student access because of a lack of technological equipment in the schools, the lack of access to equipment that has been placed in schools, and the lack of access to the benefits of technology because of the lack of ability or willingness on the part of teachers to integrate technology into the curriculum in a meaningful way. (Dosen, Gibbs, Guerrero, & McDevitt, 2004, p. 291)

Statement of the Research Question

This study examined the use of technology and its effect in Catholic K-12 schools in the state of Illinois as reported by the principals of these schools. Discrepancies in access to and use of technology may in fact work only to expand the digital divide in school settings. In this study, the third component of the definition quoted above—the teacher's lack of ability or willingness to integrate technology—is examined. It examined how principals perceived

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their teachers' use of technology in the classroom and how they incorporate technology to enhance instruction, reinforce basic skills, present information, and communicate with parents.

Most of the literature has focused primarily on a discussion of the nature of the digital divide in public schools. According to the U.S. Department of Education, National Center for Education Statistics (2004) for academic year 2003-2004, there were a total of 5,122,772 students who attended private K-12 schools in the United States. The U.S. Department of Education (Broughman & Swaim, 2006) reported 2,365,220 students attended Catholic schools within the United States. Therefore, it is important to examine the impact of the digital divide on students attending Catholic primary or secondary schools. In the state of Illinois, according to the Illinois State Board of Education (2004) there were a total of 259,734 students who attended nonpublic schools during the 2003-2004 academic year. The digital divide cuts along the lines of both socioeconomic class and race. In the private schools of the state of Illinois, 57.4% of students were White, 21.1% Black, 17.7% Hispanic, 3.6% Asian/Pacific Islander, and .2% American Indian/Alaskan Native (National Center for Education Statistics, 2004).

Review of Literature

While there has been extensive discussion of the digital divide in public schools, such as a study evaluating technology use in Illinois public schools (Silverstein, Frechtling, & Miyaoka, 2000), research specifically on technology use in private Catholic schools is limited. During the past several years, the United States has experienced an increase in the use of technology in daily life. In the 1990s, the interest in increasing the use of technology in elementary and secondary schools grew through initiatives such as providing free or discounted computers, access to the Internet, and professional development and in-service teachers (Levin, Hurst, & Burns, 2000). By 2001, the use of computers and the Internet was more widespread with traditional age students than with adults (DeBell & Chapman, 2003). The ability for individual schools to incorporate technology within the classroom is redefining the perception of a high-quality school (Mayer, Mullens, & Moore, 2000). Parents, as well as other constituents of the school, oftentimes evaluate a particular school's quality by the quantity and quality of the technology that can be observed in the building—whether or not the technology is actually used for instructional purposes. With rapid improvements in technology, teachers and principals have had difficulty keeping up with the latest changes and incorporating them into the curriculum.

While teachers and principals face challenges in staying up to date with the most recent technology, students also face their own obstacles. When determining a student's level of access to technology, there are several factors that must be taken into consideration. Becker (2000b) found that income, education, and ethnicity are key predictors. Gaps in access to computers and the Internet exist across racial/ethnic and socioeconomic levels (Rathburn & West, 2003). Yoder (2001) maintains that poor schools continue to have less access to technology than schools in wealthier districts. Yoder also posits that minorities, who are in the lower socioeconomic status, have less access to technology. Not surprisingly, the types of hardware and software used vary between schools (Roschelle, Pea, Hoadley, Gordin, & Means, 2000). But, as reported by the President's Committee of Advisory on Science and Technology in 1997, the benefit of increased access for elementary and secondary grades enhances student learning and the benefit appears to be the strongest for students of lower socioeconomic status (Mayer et al., 2000). Coley, Cradler, and Engel (1997), examining the 1996 National Assessment of Educational Progress (NAEP) survey data, found that 98% of schools owned computers with a ratio of 10 students per computer. Levin, Hurst, and Burns (2000) reported that in 1998 there was an average of 6 students per computer in private schools. The National Center for Education Statistics (Williams, 2000) surveyed schools and found that those in high-poverty areas had only 39% of their classrooms connected to the Internet, while those in lower-poverty areas had between 62% and 74% of their classrooms connected. With access to technology by both teachers and students uneven, teachers may not have the ability to utilize the latest technology within their classroom.

The No Child Left Behind Act of 2001 sought to use technology in elementary and secondary schools as a method for improving achievement with the goal of making students technologically literate by the eighth grade (Rathburn & West, 2003). This goal requires teachers to integrate technology into the curriculum. As Becker (1999) indicated, teachers' attitudes toward technology determine whether or not the Internet or any other form of technology is integrated into the curriculum. Ivers' (2002) study of teachers' perceptions about technology use found that most teachers assess themselves as intermediate users of technology, and often do not integrate technology in the classroom. Becker (1999) found that teachers' use of the Internet in the curriculum was related to several independent variables: (a) teacher age (i.e., the younger the teacher, the more likely the teacher would use the Internet); (b) the teacher's sense of expertise with the computer; (c) the teacher's level of commitment to a constructivist pedagogy; (d) whether

teachers participated in staff development around issues of technology; and (e) the level of informal contact teachers had with their colleagues in the school. In a later study, Becker (2000a) added to this list the teacher's educational philosophy, which is related to the teacher's commitment to constructivist pedagogy, the types of objectives teachers had in place for the use of technology in the curriculum, and the socioeconomic status of the school. Additionally, another study by Becker (2001) indicated that students use computers in four primary contexts: (a) special classes in computer education; (b) preparation for business and vocational education; (c) various exploratory use in elementary school classes; and finally (d) use of word processing for homework.

Teachers who were dedicated to change found that technology positively impacted the way they taught (Cuban, Kirkpatrick, & Peck, 2001). Similarly, students who were exposed to technology in the classroom were more likely to use these tools outside of class in the pursuit of their academic work (Becker, 2000a). Heath and Ravitz (2001) concluded that there was no one way to use technology in the classrooms, but that the use of technology did positively impact student motivation and learning. Through examining two high schools located in Northern California's Silicon Valley, Cuban and colleagues (2001) asked whether wiring schools, buying hardware and software, and distributing the equipment throughout would lead to abundant classroom use by teachers and students and improve teaching and learning. Their results were not as positive as those of Becker (2000a). They found that (a) access to equipment and software seldom led to widespread teacher and student use; (b) most teachers were occasional users or nonusers and when they used computers for classroom work, more often than not, their use sustained rather than altered existing patterns of teaching practices; (c) teacher age, experience, and gender were not factors in the use of technology; (d) there was little difference between veteran and novice teachers in the use of technology; and (e) there was little difference between those with or without previous technology experience or between male and female teachers.

The National Center for Education Statistics (O'Sullivan, Lauko, Grigg, Qian, & Zhang, 2003) reported in a national survey of fourth graders attending both public and private schools for the 2000 academic year that students who used computers for science instruction had increased performance scores than students who did not have the use of computers. These national data support the finding that the use of technology does positively affect learning.

Albion and Ertmer (2002) indicated that the successful adoption and use of information technology included a favorable policy environment. Access

to technology and suitably skilled teachers are becoming a reality, but the impact of technology on overall education continues to be limited. While teachers may be provided access to technology, their personal philosophical beliefs are less easily changed and deserve consideration as a critical influence on the successful integration of technology within the educational process (Albion & Ertmer, 2002). Zhao, Pugh, Sheldon, and Byers (2002) reported that teachers incorporating technology into the learning process need to understand both the benefits and constraints of various technologies and how specific technologies might support their own teaching practices and curricular goals.

Rakes and Casey (2002) found that teachers continued to be uncomfortable with technology and unwilling to integrate technology into classroom curriculum, because they lacked the time necessary to accomplish the task. Furthermore, training did not necessarily assist teachers in making the connection between technology and the curriculum, and funding was unavailable to provide remediation for either problem. The authors also found that adequate professional development for teachers did not occur even after millions of dollars were spent by administrators on purchasing technology. Technology integration is dependent on good professional development (Roschelle et al., 2000). Teachers need to have opportunities to develop their technology skills prior to being expected to utilize the hardware and software fully. If technology programs in schools are to be successful, technology must be linked to the curriculum and be compatible with assessment strategies. Teachers and technology need to work together (Byrom & Bingham, 2001).

Principals are also an important element in the use of technology within a school. Stegall (1998) reported that from a Catholic school principal's point of view, leadership from the principal is essential in order for teachers to be motivated to integrate technology within the classroom. Stegall conducted a survey of principals of 54 elementary schools in four south Texas dioceses, which indicated that 31% of the schools had Internet access; 85% had a computer curriculum; 56% had a technology plan; 44% had a technology committee; 81% had a computer teacher; and 59% included technology in their budgets. Technology and the integration of it into the school was one of the highest priorities for the principals, and they used their leadership to make it happen.

Speaker (2003) indicated that "the digital divide between technology rich schools and technology poor schools is growing wider despite attempts to provide funds and standards to bring schools to national standards," (p. 1055) especially in the southern United States. The use of technology can be a tool to improve learning for students within several areas.

As a tool, technology has the potential to improve student learning and to address a true need in our society, providing educated individuals. But, in order to provide students with the skills needed to be successful in the 21st century, teachers must utilize the technology that is available in their classrooms. With over 2 million students in the United States attending either a Catholic primary or secondary school, this is clearly a segment of the student population that must also have the technology skills necessary to be productive members of the global society.

Methodology

Adapted from the work of Silverstein et al. (2000), a survey was sent to a representative sample of K-12 Catholic school principals in the state of Illinois during the autumn of 2003. The total sample size was 319, and 240 schools (75%) were urban schools located within the Chicago metropolitan area (Cook, DuPage, Will, and Lake Counties) or in the other urban centers in the state (Peoria, Rockford, Belleville, and Springfield). Seventy-nine schools (25%) of the sample were rural schools located outside those areas designated as urban. The survey assessed how these schools used educational technology.

This study reports on one aspect of a more extensive survey of private schools: principals' perceptions of the percentage of teachers' use of technology in their classes and the effect of these applications on their school over the last 5 years. These items were analyzed by comparing the principals' responses by the variables of type of school (elementary vs. secondary), location of the school (rural vs. urban), and level of poverty (determined by the percentage of students who qualify for free and reduced lunches). If 60% or more of the students within the school qualified for free or reduced lunch, they were classified as high poverty. If 12% or fewer of their students qualified for free or reduced lunch, they were then classified as low poverty. Chi-square tests were run to determine statistical significance.

The survey was sent to principals of Catholic schools throughout the state of Illinois, with the exception of one diocese, whose central office personnel gathered the data for the researchers. Since principals were free to participate or not participate in this study, an unintended consequence of the sampling was that a disproportionate number of low-poverty schools were self-selected.

Findings

The researchers asked participating principals to report what percentage of their faculty used technology for various instructional purposes. Overall, these responses indicated that most Catholic school faculties have some individuals who are using technology in a wide variety of ways, but that overall, most members of the faculty are not as engaged.

According to the results of this survey (see Table 1), most teachers in Catholic schools use technology either to gather information or pictures from the Internet or to create hard copy materials for their students. Interestingly, most of these teachers do not make use of presentation software to present information to their students. While principals perceived that their faculty used technology to enhance the quality of education in a given subject area, they reported that markedly fewer faculty use technology to engage their students directly, for example, by assigning technology-based homework outside the classroom, reinforcing basic skills, or making use of technology as an assessment tool. According to these principals, most teachers do not use technology to correspond with parents.

Chi-square tests were performed to determine if there were any statistically significant differences between those who taught in elementary and high schools, urban and rural schools, or high-poverty and low-poverty schools (see Tables 2, 3, and 4). Although there are several areas of statistically significant difference, the Catholic schools surveyed remained fairly constant in their uses and non-uses of technology.

Table 2 shows the distinctions between urban and rural schools in their use of technology. There is a statistically significant difference between urban and rural schools in two areas: facilitating or enhancing the quality of classroom instruction in a given subject area and corresponding with parents.

The percentage of faculty who use technology for facilitating or enhancing the quality of classroom instruction in a given subject area was dependent on school location, (X^2 (4) = 9.89, $p < .04$). While 45% of urban school principals reported that at least 51% or more of their faculty used technology for facilitating or enhancing the quality of classroom instruction, only 28% of rural school principals reported that at least 51% or more of their faculty used technology for facilitating or enhancing the quality of classroom instruction.

There was a statistically significant difference between rural and urban schools in the percentage of faculty who used technology to correspond with parents, (X^2 (4) = 12.60, $p < .01$). However, neither group was more likely to use technology than not to use it in corresponding with parents. In urban schools, 88.08% of responding schools said that less than half their faculty

Table 1

Percentage of Teachers Engaged in Using Particular Instructional Technology at Each School (Percentage of Schools Responding in Each Category)

Instructional protocol using technology	None	1-25%	26-50%	51-75%	76-100%
Getting information or pictures from the Internet	2.9	23.9	21.7	25.2	26.2
Creating instructional materials and handouts	0.6	26.0	29.5	25.0	18.8
Developing electronic portfolios or other alternative assessments	29.4	47.7	13.5	5.5	3.9
Facilitating or enhancing the quality of classroom instruction in a given subject area	0.6	28.8	29.4	24.9	16.2
Providing instruction on specific computer applications	8.1	56.3	18.4	12.6	4.5
Assigning homework outside the classroom	20.2	35.9	22.1	10.3	11.5
Corresponding with parents	30.8	41.7	14.7	5.8	7.1
Reinforcing basic skills through instructional programs	4.5	37.8	27.9	17.0	13.8
Presenting information to students via presentation software	26.5	46.5	15.8	8.4	2.9

corresponded with parents through technology, compared with 84.4% of rural schools that reported less than half their faculty corresponded with parents through technology. Of the urban schools reporting faculty use of technology to communicate with parents, 11.9% did so over the 50% mark, while 15.57% of rural schools reported over the 50% mark.

While there seemed to be some noticeable difference in the percentage of urban and rural schools that assign technology-based homework outside the classroom—22.98% of urban schools reported that over 50% of their faculty

Table 2

Frequency (Percentage) of Reported Faculty Use of Technology for Various Educational Purposes by School Location

	None	1 - 25%	26-50%	51-75%	76-100%
Urban					
Getting information or pictures from the Internet	3.01	25.86	20.69	22.84	27.59
Creating instructional materials and handouts	0.86	26.29	28.02	24.14	20.26
Developing electronic portfolios or other alternative assessments	30.77	47.44	11.97	5.98	3.84
Facilitating or enhancing the quality of classroom instruction in a given subject area*	0.43	26.6	27.47	26.18	19.31
Providing instruction on specific computer applications	8.62	59.48	15.95	12.07	3.88
Assigning homework outside the classroom	16.6	38.72	21.7	10.64	12.34
Corresponding with parents*	30.21	42.55	15.32	3.4	8.51
Reinforcing basic skills through instructional programs	4.68	37.02	25.96	16.17	16.17
Presenting information to students via presentation software	25.32	46.78	16.31	7.72	3.86
Rural					
Getting information or pictures from the Internet	28.57	18.18	24.68	32.47	22
Creating instructional materials and handouts	0	24.68	33.77	27.27	14.29
Developing electronic portfolios or other alternative assessments	25	48.68	18.42	3.95	3.95
Facilitating or enhancing the quality of classroom instruction in a given subject area*	1.31	35.53	35.53	21.05	6.58
Providing instruction on specific computer applications	6.49	46.75	25.97	14.29	6.49
Assigning homework outside the classroom	31.17	27.27	23.38	9.09	9.09
Corresponding with parents*	32.46	38.96	12.98	12.98	2.59
Reinforcing basic skills through instructional programs	3.89	40.26	29.87	19.48	6.49
Presenting information to students via presentation software	29.87	45.45	14.29	10.39	0

Note. *Statistically significant

make these assignments, compared to 18.18% of rural schools—this difference was not significant, (X^2 (4) = 8.96, $p < .06$).

Reiterating the primary premise made earlier in these findings, Catholic school faculties, as a body, are not using technology extensively as an instructional tool. However, when examining the differences between low-poverty and high-poverty schools, it becomes apparent that the use of technology in

the classrooms of the poor is less likely to occur than in the classrooms of the more affluent. Table 3 provides comparative data about technology usage by poverty level. A chi-square analysis of the data, sorted by poverty level, showed a statistically significant difference between high-poverty and low-poverty schools in the use of technology to communicate with parents, (X^2 (12) = 22.86, $p < .05$) and as a means for assisting teachers in the presentation of information in classrooms, (X^2 (12) = 38.11, $p < .001$). While one might explain the disparity in communicating with parents by technology between the high- and low-poverty schools as a function of high-poverty families not having the technology available in the home, it is much more difficult to explain the disparity between high- and low-poverty schools in the faculty use of presentation software to assist them in disseminating information.

When examining the data from two groups (under 50% and over 50%), the researchers found that the reported percentage of faculty use of technology for providing instruction on specific computer applications is dependent on poverty level, (X^2 (4) = 15.51, $p < .025$). In low-poverty schools, 22% of the principals reported that 51% or more of their teachers use technology for providing instruction on specific computer applications, such as word processing and spreadsheets, while in high-poverty schools, 17.2% of principals reported similar findings. The reader should note that 20% of the principals in high-poverty schools reported that none of their faculty were engaged in providing instruction in the specific computer applications, while only 2.9% of the principals in low-poverty schools reported a similar response.

There were 275 elementary schools and 44 secondary schools that participated in this study. Comparing principal responses between the two educational levels, elementary and secondary, and the two group models (less than 50% and greater than 50%), revealed that a greater percentage of secondary school principals reported their faculty used technology for getting information and pictures from the Internet than elementary principals (see Table 4). The principals reported that larger numbers of faculty in secondary schools were more likely to use the Internet as a research tool, (X^2 (4) = 9.418, $p < .051$), assign homework involving technology, (X^2(4) = 24.01, $p < .001$), make use of technology to develop alternative assessments, (X^2(4) = 17.73, $p < .001$), use presentation software in the classroom, (X^2(4) = 9.47, $p < .05$), and use technology to communicate with parents, (X^2 (4) = 11.160, $p < .025$).

Principals were asked to evaluate the overall effectiveness of various forms of technology in their buildings over the past 4 to 5 years. An examination of their responses indicated that a significant percentage of the principals surveyed had a high regard for various types of technology. Only a small fraction of principals found the effect of any of these technologies as somewhat

Table 3

Percentage of Faculty Use of Technology for Various Educational Purposes by Low and High Poverty

	None	1 – 25%	26-50%	51-75%	76-100%
Low Poverty					
Getting information or pictures from the Internet	1.4	20.0	20.0	27.1	31.4
Creating instructional materials and handouts	0.7	0.7	18.0	32.4	26.6
Developing electronic portfolios or other alternative assessments	20.7	51.4	16.4	5.7	5.7
Facilitating or enhancing the quality of classroom instruction in a given subject area	0.7	22.3	32.4	30.9	13.7
Providing instruction on specific computer applications*	2.9	59.0	16.5	13.7	7.9
Assigning homework outside the classroom	21.3	35.5	22.0	8.5	12.8
Corresponding with parents*	22.7	43.3	17.0	10.6	6.4
Reinforcing basic skills through instructional programs	3.5	36.2	26.2	19.9	14.2
Presenting information to students via presentation software*	5.7	47.1	20.0	14.3	2.9
High Poverty					
Getting information or pictures from the Internet	2.9	25.7	31.4	22.9	17.1
Creating instructional materials and handouts	0.0	2.9	37.1	22.9	22.9
Developing electronic portfolios or other alternative assessments	40.0	45.7	11.4	0.0	2.9
Facilitating or enhancing the quality of classroom instruction in a given subject area	2.9	29.4	23.5	26.5	17.6
Providing instruction on specific computer applications*	20.0	42.9	20.0	14.3	2.9
Assigning homework outside the classroom	7.1	45.7	14.3	11.4	11.4
Corresponding with parents*	48.6	37.1	14.3	0.0	0.0
Reinforcing basic skills through instructional programs	8.6	37.1	22.9	14.3	17.1
Presenting information to students via presentation software*	48.6	31.4	17.1	2.9	0.0

Note. *Statistically significant

negative, and a majority in almost each case evaluated the effect as either somewhat or very positive (see Table 5). Notable in the principals' responses were the evaluation of "No Impact" in two areas: the use of design technologies (43.5%) and learning management technologies (20.3%). One potential explanation for these two variances from the otherwise positive responses might be that these technologies are not in use at the particular schools, and thus have no impact.

Table 4

Frequency (Percentage) of Reported Faculty Use of Technology for Various Educational Purposes by the Level of School

	None	1-25%	26-50%	51-75%	76-100%
Elementary					
Getting information or pictures from the Internet*	3.4	26.5	20.5	24.3	25.4
Creating instructional materials and handouts	1.0	28.0	28.0	25.7	17.2
Developing electronic portfolios or other alternative assessments*	31.34	46.64	13.80	5.97	2.24
Facilitating or enhancing the quality of classroom instruction in a given subject area	.7	31.5	28.5	24.0	15.4
Providing instruction on specific computer applications	9.0	54.5	19.4	12.7	4.5
Assigning homework outside the classroom*	22.96	35.93	21.85	10.74	8.52
Corresponding with parents*	33.7	41.1	14.1	5.2	5.9
Reinforcing basic skills through instructional programs	3.7	37.8	26.7	16.7	15.2
Presenting information to students via presentation software*	29.4	45.0	14.9	7.8	3.0
Secondary					
Getting information or pictures from the Internet*	0	7.3	29.3	31.7	31.7
Creating instructional materials and handouts	0	12.2	39.0	19.5	29.3
Developing electronic portfolios or other alternative assessments*	16.67	54.76	11.90	2.38	14.29
Facilitating or enhancing the quality of classroom instruction in a given subject area	0	11.9	35.7	31.0	21.4
Providing instruction on specific computer applications	2.4	68.3	12.2	12.2	4.9
Assigning homework outside the classroom*	2.38	35.71	23.81	7.14	30.95
Corresponding with parents*	11.9	45.2	19.0	9.5	14.3
Reinforcing basic skills through instructional programs	9.5	38.1	28.6	19.0	4.8
Presenting information to students via presentation software*	7.3	56.1	22.0	12.2	2.4

Note. *Statistically significant

Examining the raw data from this evaluation, the researchers noted the marked non-response on several items (Table 6). The raw data diminishes the responses that the percentage of principals' responding provided. This forced the researchers to ask why approximately half to less than half of the respondents chose not to respond to the items (creative, design, and management technologies). At the time that the survey was constructed the researchers did

Table 5

Responses of Principals (Percentage) to the Question Evaluating the Effect of Various Types of Technology Over the Last 4 to 5 Years

Looking back at the past 4 to 5 years	Very negative	Somewhat negative	No impact	Somewhat positive	Very positive
What effect has computer-assisted instruction had on your school? (drill and practice, tutorials)	0	0.3	4.7	44.7	50.3
What effect has creative technologies had on your school? (MIDI interface, digital art/photography)	0	1.3	24.7	44.8	29.2
What effect has data manipulation had on your school? (statistical analysis, spreadsheets)	0	0.4	11.3	51.2	37.1
What effect has design technologies had on your school? (robotics, CADCAM layout design)	0	1.2	43.5	34.1	21.2
What effect has telecommunications had on your school? (Internet, KidsNet, America Online)	0	0	3.8	33.8	62.5
What effect has presentation technologies had on your school? (PowerPoint, multimedia)	0	0	3.8	33.8	62.5
What effect has publishing and productivity technologies had on your school? (word processing, desktop publishing)	0	0	1.0	22.4	76.6
What effect has research technologies had on your school? (electronic encyclo-pedia and databases)	0	0	4.2	32.6	63.3
What effect has learning management technologies had on your school? (assessment, electronic portfolios, tracking curriculum framework objectives)	0	0	20.3	50	29.7

not think to provide an option that stated "This technology is not in use at my school." This was a weakness in the survey design.

However, the question of how to interpret the non-response remains. The researchers believe that the respondents who had faithfully responded to a fairly extensive, 35-question survey would not just randomly fail to respond to several factors. Since the types of technology which the principals had

Table 6

Response of Principals (Actual Count) to the Question, Evaluating the Effect of Various Types of Technology Over the Last 4 to 5 Years

Looking back at the past 4 to 5 years	Very negative	Somewhat negative	No impact	Somewhat positive	Very positive	TOTAL
What effect has computer assisted instruction had on your school? (drill and practice, tutorials)	0	1	14	134	151	300
What effect has creative technologies had on your school? (MIDI interface, digital art/photography)	0	2	38	69	45	154
What effect has data manipulation had on your school? (statistical analysis, spreadsheets)	0	1	29	131	95	256
What effect has design technologies had on your school? (robotics, CADCAM layout design)	0	1	37	29	18	85
What effect has telecommunications had on your school? (Internet, KidsNet, America Online)	0	0	10	91	168	269
What effect has presentation technologies had on your school? (PowerPoint, Multimedia)	0	0	9	81	150	240
What effect has publishing and productivity technologies had on your school? (word processing, desktop publishing)	0	0	3	66	226	295
What effect has research technologies had on your school? (electronic encyclopedia and databases)	0	0	11	86	167	264
What effect has learning management technologies had on your school? (assessment, electronic portfolios, tracking curriculum framework objectives)	0	0	30	74	44	148

failed to evaluate were much less common than the others listed, the researchers have chosen to interpret this non-response as an indication that this type of technology is not present in the school.

Conclusions

As a group, Catholic school teachers use technology primarily for preparing to teach, rather than as a teaching tool. Principals reported more faculty using

technology to find information or pictures on the Internet or to develop instructional materials and handouts than for any other use. While a large number of principals saw that their faculties were using technology to facilitate or enhance the quality of classroom instruction in a given subject area, this enhancement did not take the form of reinforcing basic skills, having students engage with the technology in order to assess student learning, or using specific applications to explore concepts. It seems that teachers use technology as a preparatory tool for their lessons, but not as a tool for their students to engage more deeply in the subject matter at hand. Technology seems to have made teachers' lives easier, but it does not seem to have changed how teachers teach and how students learn in classrooms.

In looking at Catholic schools by location (urban versus rural), there were only two factors that were significant: facilitating and enhancing the quality of classroom instruction and using technology to correspond with parents. More urban principals than rural principals believed their faculty were using technology to facilitate and enhance the quality of classroom instruction, while more rural faculty reported that greater numbers of their faculties were using technology to communicate with their parents. In terms of the differences in reporting between elementary and secondary schools, secondary faculties made use of technology for their own research via the Internet and communicating with parents. They also use technology in their class presentations, assessments, and homework assignments at significant levels above elementary faculties.

The differences between schools with high levels of poverty in comparison to lower levels of poverty show that the digital divide is still in our midst. Principals reported, at significant levels, that faculties in low-poverty schools were more likely to instruct students in the use of various computer applications, to use presentation technology to enhance the dissemination of information, and to communicate with parents than their colleagues in schools with higher levels of poverty. While one can explain a lack of using technology to communicate with parents because of a lack of computer technology in the homes of the poor, it is much more difficult to explain why 20% of the high-poverty level schools surveyed did not teach their students how to use computer applications, in comparison to only 2.9% of the low-poverty schools.

If the researchers' interpretation of the principals' evaluation of various forms of technology is correct, then a significant number of the schools surveyed do not have applications for creative, design, or evaluative technologies in their schools, or perhaps worse, they were unaware of the applications that were present in their schools. At first glance, these types of applications

would seem to be too obscure for a parochial school. When one realizes that digital cameras are one example of this technology, it makes it more difficult to accept its lack of relevance for a K-12 school.

The researchers found that this sampling of Catholic schools was representative of the wider private school population of the state of Illinois (Dosen et al., 2004) and not that different from what is experienced in most of the state's public schools. The question that the researchers and Catholic school practitioners need to ask is whether this level is good enough.

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