Information Technology Use by Local Governments in the Northeast: Assessment and Needs

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Abstract
How local governments are using information technology is important to understand if extension teaching on local government and economic development issues is to be effective. This study uses results from surveys of local officials in New York, Pennsylvania, and West Virginia to examine the potential for delivering extension programs to local officials through information technology. The responses suggest that local officials predominantly prefer face-to-face training, but many are willing to try distance education. In addition, even though many governments are using the Internet, there still are significant numbers who do not yet have access to these technologies.

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Local governments in the Northeast are involved in a variety of important public policy issues. Most local officials in the region are volunteers and lack formal training in governance on many of the complex issues they face. Improving their knowledge of these issues and their skills and abilities is a vital mission of Extension in many of the region's states.

Recent changes in information technology, such as the Internet, have the potential to significantly alter local government officials' access to information and training on important public issues and the ability of Extension to deliver educational programs to officials. Information technology, similarly, has made it easier for local governments to provide information to their citizens and to handle information, communication, and other important management concerns.

How local governments are using information technology, both as users of information others have posted (e.g., retrieving regulatory information from a state agency or participating in Web-based training) and as providers of information for others (e.g., having a municipal or county Web site with budget information or a newsletter for citizens), is important to understand if Extension teaching on local government and economic development issues is to be effective. Accurate information about local government usage of information technology, the barriers they face, and the potential use of information technology for local government training would make it easier to develop multi-state educational programs in the Northeast and to take advantage of the potential advantages of information technology as a means of teaching Extension programs. This article uses results from surveys of local officials in New York, Pennsylvania, and West Virginia to examine these questions.

Background

There have been several state-level studies of the needs of local officials in the region, but these have been with a single-state focus, lacking coordination across state lines to identify cross-cutting issues. Kelsey and Lembeck (1995a, 1995b, & 1998) surveyed every Pennsylvania township and borough (all 2,516 of them) in 1994 and asked a variety of questions about computer use, training needs, and local service provision. About 55% of the respondents reported using a computer, with larger municipalities being much more likely to do so than were smaller municipalities. Dougherty and Plein (1997) conducted a needs assessment survey of 1,803 local officials in West Virginia in 1996 and found that economic development issues were rated as most important.

The potential of using distance education technologies to provide training for local government officials similarly was ignored in these prior studies, even though it has potential for great time- and cost-saving benefits for both students and instructors. The use of distance technology similarly would make it easier to provide multi-state trainings across the region.

Distance education-based training has been widely used for extension educators. These include in Alabama (Stuempler, Jelinek, Brown, & Sanders, 1997), Nebraska (Mescher, 1995), Pennsylvania (Escott et al., 1996), Texas (Hiel & Herrington, 1997), South Carolina and Georgia (Lippert et al., 1998), Oklahoma (Stewart & Soliah, 1987), and Oregon (Patterson & Wykes, 1992). It has time- and cost-saving benefits, particularly when used to teach a large number of widely separated sites (Boland, 1988). A videoconference produced by Oklahoma State University and received at 24 sites across Oklahoma, for example, cost only $2.91 per person, compared to $9.13 per person if it had been delivered in-person (Stewart & Soliah, 1987).

Distance education methods can be viewed more favorably by Extension educators than face-to-face sessions. Participants in a Nebraska leader training program, for example, preferred satellite delivery over in-person training, 63% to 35% (Mesecher, 1995). Those results might suffer from self-selection bias, however, because the survey focused on participants in the satellite-based program. People who prefer in-person training might simply have chosen not to participate in the program because it was distance education-based.

Despite this enthusiasm by some for distance education, it is unclear exactly how receptive local government officials in the Northeast would be to distance-based training. An attempted statewide local government training program in Pennsylvania based on Pic-Tel™ technology, for example, was canceled in 1995 due to lack of sufficient registrations, despite being actively supported and promoted by the state's local government associations and Department of Community Affairs. It is important to determine local officials' attitudes towards distance education-based training.

Methods

Parallel mail surveys to local government officials were conducted in New York, Pennsylvania, and West Virginia during the spring of 2000. The survey instruments included a series of questions on how the local governments are using computers, their use of information technology, and the officials' personal interest in participating in local government training programs. The surveys also included some state-specific questions.

The survey methodology in each state followed a modified Dillman method (Dillman, 1978), with an initial mailing, reminder postcard, and follow-up mailing to non-responders. Due to funding differences, the sample sizes varied across the states, from 799 in New York (463 returned, for a 58% response rate), 474 in Pennsylvania (306 returned, for a 64.6% response rate), and 496 in West Virginia (168 returned, for a 39.5% response rate). In all states, the sample was randomly selected from official state lists of local government officials.

Results

The survey respondents in New York represented that state's mix of communities when gauged by size of place or region of the state. The respondents were well balanced across the population size range from small to large municipalities and corresponded well to the size distribution of such jurisdictions in the state.

Respondents to the Pennsylvania survey similarly were generally representative of municipalities in the commonwealth. The smallest municipalities (those with less than 500 residents) were slightly over-represented (19% of respondents, compared to their accounting for 14% of all municipalities), while moderate-sized (population between 1000 and 2,500) were slightly under represented (25% of the respondents, compared to their being 30% statewide).

About half of the survey responses in West Virginia came from cities, and half came from towns, providing a good cross section of the state's local governments. Large cities were somewhat over represented in the responses.

Use of Computers

The vast majority of municipal governments in the three states use computers in their operations. Almost all municipal governments in New York and West Virginia use computers, while adoption has been somewhat less in Pennsylvania (Table 1).

Table 1.
Percent of Local Governments Using Computers in Their Operations

Type of Municipal Government	Use Computers
New York	
All municipal governments	97%
- Town governments	95%
Pennsylvania	
All municipal governments	79%
- Borough governments	86%
- Township governments	75%
West Virginia	
All municipal governments	92%
- City governments	99%
- Town governments	76%

Accounting was the most commonly cited function for which computers were used by municipal governments in the three states (Table 2). Payroll and board minutes and correspondence were also very common functions. These functions are basic management functions of municipal governments. In general, fewer municipalities reported using their computers for planning functions, such as GIS-mapping, or capital planning. Anecdotal evidence suggests that many municipalities do not do these types of planning functions, regardless of the technology they use.

Table 2.
For Which Functions Is a Computer Used?
(percent of local governments using computers)

Function	New York			Pennsylvania		West Virginia	
	Cities	Town	Village	Boroughs	Townships	Cities	Towns
Accounting	100%	93%	95%	90%	95%	94%	76%
Payroll	100%	85%	93%	76%	90%	94%	62%
Annual Budgeting	100%	82%	95%	91%	88%	90%	62%

Capital Planning	83%	36%	61%	43%	38%	52%	17%
Board Minutes & Correspondence	92%	82%	95%	96%	94%	70%	71%
Inventory/ Materials Management	92%	50%	69%	38%	47%	51%	27%
GIS - Mapping	67%	27%	28%	23%	24%	37%	5%
Police/Sheriff	100%	23%	63%	68%	56%	90%	58%

Internet and Web Sites

More than half of the municipal governments reported having access to the Internet. This ranged from 47% of towns in West Virginia, 56% of towns in New York and townships in Pennsylvania, to 82% of cities in West Virginia and 100% of cities in New York (Table 3). A greater percentage of municipal governments with computers reported access to the Internet, suggesting that many local officials view Internet access as an important priority. And yet it is important to note that around one third of all municipal governments across the three states did not have Internet access, despite the general optimism about the Internet, and thus are unable to access Internet-based resources or training.

Among those with Internet access, retrieving information from state agencies was the most commonly cited Internet use (Table 3). Correspondence and email similarly was a very common Internet use, with use ranging between 49% and 79% of the different types of municipal governments. Very few local officials reported having used the Internet to participate in on-line training. Of the three states, West Virginia had the highest reported use of the Internet for on-line training, done by 14% of their city governments.

Table 3.
Access & Use of the Internet

	New York			Pennsylvania		West Virginia	
	Cities	**Town**	**Village**	**Boroughs**	**Townships**	**Cities**	**Towns**
Has Access to the Internet							
Percent of all municipal governments	100%	56%	66%	62%	56%	82%	47%
Percent of governments with computers	100%	58%	73%	69%	67%	83%	56%
For What Purposes Does Your Local Government Use the Internet? *(percent of those with internet access)*							
Retrieving information from:							
- State agencies	100%	89%	83%	88%	87%	76%	65%

- Local government�s state association	92%	60%	59%	69%	79%	60%	41%
- Other local governments	69%	46%	40%	36%	46%	54%	41%
Sharing information with citizens	35%	35%	30%	35%	22%	42%	22%
Correspondence/email	74%	74%	79%	75%	67%	66%	49%
Participating in on-line training	6%	6%	6%	8%	2%	14%	5%

The percentage of municipal governments having a Web site varied among the three states. About 85% of the city governments using computers in New York reported having a Web site, compared to 56% of cities in West Virginia, and only 31% and 48% of towns and villages in New York, and 16% and 28% of townships and boroughs in Pennsylvania (Table 4).

Table 4.
Municipal Web Site

	New York			Pennsylvania		West Virginia	
	Cities	**Town**	**Village**	**Boroughs**	**Townships**	**Cities**	**Towns**
Has Municipal Web Site							
Percent of all municipal governments	85%	30%	44%	25%	12%	56%	17%
Percent of governments with computers	85%	31%	48%	28%	16%	56%	20%
What Types of Materials Do They Have on Their Web Site? *(percent of those with a municipal web page)*							
Contact information, such as officials names & phone number	85%	27%	37%	97%	95%	92%	46%
Links to other organizations in the community	85%	15%	30%	62%	65%	70%	46%
Local community newsletter	31%	9%	15%	41%	55%	30%	23%
Planning information	46%	8%	8%	10%	60%	26%	8%

Budget information	31%	5%	8%	17%	30%	22%	15%
Regularly posted meeting minutes	39%	11%	15%	48%	60%	30%	15%

Responses from the local governments with a Web site suggest that many municipal Web sites are fairly basic and not very extensive. Other than the townships in Pennsylvania, less than half of the municipal government types in any of the states reported using their Web sites to share community newsletters, planning information, budgets, or meeting minutes (Table 4).

Training

Many of the respondents have participated in at least one type of local government training program. Officials were most likely to report having participated in a face-to-face training setting in their own county than in another type of training (with the exception of city and town officials in New York, who were slightly more likely to have participated in a video downlink- based training) (Table 5). Around two-thirds of the municipal officials in Pennsylvania had participated in such face-to-face training, compared to a little more than half of the town and village officials in New York and 32% and 24% of municipal officials in West Virginia. The next most common type of training was a classroom setting with a video downlink. Not many local officials had participated in training programs that used alternative delivery methods, such as microcomputer/CD-ROMs, audio tape-based correspondence course, video tape-based correspondence course, or Web site-based correspondence course.

Table 5.
Types of Training Methods the Respondents Have Used

Training Approach	New York			Pennsylvania		West Virginia	
	Cities	Town	Village	Boroughs	Townships	Cities	Towns
Face-to-face classroom setting their county	31%	59%	52%	63%	68%	32%	24%
Classroom setting with video downlink	39%	64%	31%	24%	24%	20%	12%
Correspondence course with notebooks	8%	10%	13%	13%	14%	19%	6%
Microcomputer/CD-ROM based training	8%	10%	14%	10%	5%	10%	5%
Correspondence course with workbooks and audio tape	23%	8%	15%	8%	8%	16%	6%
Correspondence course with workbooks and video tape	15%	13%	23%	8%	7%	18%	9%
Correspondence course with workbooks and	15%	6%	7%	3%	2%	3	0%

website/email interaction				

The officials were asked which of the training methods they have experienced that they liked the best and which they liked the least. The overwhelming choice for most types of local officials was face-to-face training. Nine-six percent of Pennsylvania township officials who have participated in such a training, for example, preferred it to all other training methods (Table 6). In contrast, 56% of the borough officials and 43% of the township officials in Pennsylvania who have experienced a video downlink-based training liked video downlink training least of all. The other non-face-to-face training methods had similar negative ratings from those who have experienced them, with the sole exception of city officials in New York, who were as likely to favor correspondence courses with workbooks and videotapes as they did face-to-face instruction.

Table 6.
What Percentage of the Officials Who Have Experienced a Training Method Like It Best (and Least)?

Training Approach	New York			Pennsylvania		West Virginia	
	Cities	Town	Village	Boroughs	Townships	Cities	Towns
Face-to-face classroom setting their county	50% (0%)	67% (7%)	73% (7%)	85% (14%)	96% (3%)	100% (3%)	84% (11%)
Classroom setting with video downlink	25% (25%)	20% (18%)	11% (16%)	8% (56%)	0% (43%)	11% (28%)	0% (33%)
Correspondence course with notebooks	0% (0%)	0% (31%)	7% (17%)	0% (67%)	6% (36%)	0% (47%)	40% (40%)
Microcomputer/CD-ROM based training	0% (0%)	23% (0%)	0% (8%)	30% (0%)	29% (50%)	22% (56%)	0% (25%)
Correspondence course with workbooks and audio tape	0% (0%)	0% (47%)	8% (18%)	29% (20%)	8% (22%)	7% (36%)	20% (40%)
Correspondence course with workbooks and video tape	50% (0%)	15% (21%)	4% (14%)	13% (38%)	0% (33%)	6% (13%)	14% (14%)
Correspondence course with workbooks and website/email interaction	0% (0%)	19% (36%)	13% (33%)	0% (33%)	0% (0%)	33% (0%)	-- --

Table 7.
Which Training Methods Local Officials Would Like to Try

Training Approach	New York			Pennsylvania		West Virginia	

	Cities	Town	Village	Boroughs	Townships	Cities	Towns
Face-to-face classroom setting their county	8%	17%	19%	12%	11%	24%	14%
Classroom setting with video downlink	23%	9%	16%	9%	16%	21%	13%
Correspondence course with notebooks	15%	15%	18%	16%	19%	9%	12%
Microcomputer/CD-ROM based training	31%	31%	30%	24%	20%	20%	15%
Correspondence course with workbooks and audio tape	0%	17%	17%	16%	14%	9%	10%
Correspondence course with workbooks and video tape	8%	23%	18%	19%	18%	11%	12%
Correspondence course with workbooks and website/email interaction	15%	24%	23%	19%	16%	19%	6%

Implications

The survey responses suggest that many local government officials' experience with distance education so far has not been particularly good. Face-to-face training was the overwhelming preference, even for those who have used alternative training methods. Less than half of those who have used distance education-based training like it best of all training methods, while more than half liked it least. This is particularly noteworthy for video downlink-based trainings, a finding which contrasts sharply with Extension's recent optimism about satellite- and other distance education-based training.

It is important to understand the training context in which these attitudes are being expressed. The majority of local officials in these three states are volunteers who work at another job during the day and conduct their local government work during the evening and weekends. Getting these officials to attend trainings can be difficult, at best, even when they understand they need training because they have enough other activities demanding their time. If they have doubts about the method of training, such as many in this survey express towards distance education, there will only be a greater disincentive for them to attend such training.

It was not possible to evaluate the quality of the distance education-based training the respondents had experienced, but the percentage of local officials willing to try alternative training methods suggests that a well-designed distance education-based training program could find a sufficient audience. In addition, as officials become more familiar and comfortable with distance learning and as high-quality training programs prove their worth, the general attitudes towards distance learning may become more favorable.

The survey responses also indicate that even though computers and the Web are being used by many local governments in the region, there still are a significant number of local governments who do not yet have access to these technologies. It is important that Extension, state agencies, and others who provide information and resources to local governments not rely solely upon the Web for disseminating information, or these governments will be excluded.

Despite these cautions, the survey responses do indicate that there are major opportunities for

Extension and others to help local governments take fuller advantage of their computers, particularly for capital planning and GIS training. The key issue that should be thought through is the best way of providing such training, particularly given the local officials' attitudes towards training.

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References

Boland, D. S. (1988). *Virginia telemedia systems for administrative, training and educational uses*. (Report No. IR014407). Richmond, VA: Virginia State Department of Information Technology.

Dillman, D. A. (1978). *Mail and telephone surveys: The total design method*. New York: John Wiley and Sons

Dougherty, M., & Plein, C. (1997). *Challenges and opportunities for West Virginia communities: A report on local needs*. Morgantown: West Virginia University Department of Public Administration.

Escott, R., Mincemoyer,C., Nauman, D., Rodgers,M., & Sigman-Grant, M. (1996). Developing skills and expertise to program in Latino communities using satellite technology. *Journal of Extension*[On-line], 34(5). Available at: http://www.joe.org/joe/1996october/tt2.html

Hattery, M. (2001). 2000 Survey of New York's government leaders: Policy issues, training needs and technology use. *Management and Financial Report Number 16*. Local Government Program, Department of Applied Economics and Management, Cornell University. Retrieved October 23, 2002, from: http://www.cardi.cornell.edu/research_briefs/pdf/CLGP6-2001.pdf

Hiel, E. R., & Herrington, D. (1997). Plausible uses and limitations of videoconferencing as a tool for achieving technology transfer. *Journal of Extension*[On-line], 35(4). Available at: http://www.joe.org/joe/1997august/rb1.html

Hinton, K. L. (1995). Perceived training needs of volunteers in government service. *Public Personnel Management*. 24:531-534.

Kelsey, T. W. (1998). New residents and the demand for public services in growing communities: Local officials' perceptions and responses. *Economic Development Quarterly*. Vol. 12(3):279-288.

Kelsey, T. W., & Lembeck, S.M. (1995). *Local officials look at Pennsylvania local government: Using computers for municipal functions*. University Park: Cooperative Extension, The Pennsylvania State University.

Kelsey, T. W., & Lembeck, S.M. (1995). *Local officials look at Pennsylvania local government: Volunteers, information, and training*. University Park: Cooperative Extension, The Pennsylvania State University.

Lippert, R. M., Plank, O., Camberato, J., & Chastain, J. (1998). Regional Extension in-service training via the Internet. *Journal of Extension*[On-line], 36(1). Available at: http://www.joe.org/joe/1998february/a3.html

Mesecher, C. (1995). The effectiveness of delivering leader training lessons via satellite. *Journal of Applied Communications*, 79(1), pp. 26-32.

Patterson, J., & Wykes T. (1992). How effective are video teleconferences? *Journal of Applied Communications*, 76(2), 73.

Stewart, J. R., & Soliah, L. (1987). Creating educational excellence. *Journal of Extension*[On-line]. 25(3). Available at: http://www.joe.org/joe/1987fall/a8.html

Struempler, B., Jelinek, S. M, Brown, A. H., & Sanders, L. G. (1997). Using distance education to teach the new food label to Extension educators. *Journal of Extension*[On-line]. 35(2). Available at: http://www.joe.org/joe/1997april/rb1.html

Teagarden, J. (2000). *A comparison of local concerns in West Virginia communities: 1996 and 2000*. Regional Research Institute. Unpublished manuscript.

Urban, M. (2000). *Training needs and computing uses of local Officials in West Virginia*. Morgantown: Regional Research Institute. Unpublished manuscript.