Commonwealth Research Consulting, Inc.
Bulletin

National Institute of Corrections
Training Evaluation Project

2008 Evaluation Results: Satisfaction, Learning, and Action Plan Progress

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This is the fourth in a series of research bulletins on NIC's Training Evaluation Project. The project is being conducted by a team of researchers from Commonwealth Research Consulting (CwRC), in collaboration with NIC's Division of Research and Evaluation. The purpose of the project, and the bulletin series, is to enhance understanding of training programs, and when appropriate, facilitate program improvements to better serve the field. Previous bulletins in

Highlights

- **Data:** 675 surveys[1] completed by 84 training participants and 11 trainers were analyzed for the bulletin. Response rates averaged 99% on initial surveys and 93% on follow-up surveys (Table 1).

- **Trainer Ratings:** Trainers rated over 96% of participants as appropriate or outstanding on their attitude, participation, and learning (page 10).

- **Satisfaction:** Participant satisfaction with training and trainers was quite high overall, averaging 4.52 and 4.77 respectively (Table 7) on a 5 point scale where 3 is neutral and 5 is very favorable.

- **Learning:** On average participants reported a medium level (3.06) of training-related knowledge and skills prior to training, and a high to very high level (4.55) after training (Table 11).

- **Correlates of Learning:** Participant **satisfaction** with training was the strongest correlate of **learning** (r=.459, p<.001, N=82, page 16). Learning was also significantly correlated with several demographic variables, including age, education, experience, and race (pages 16 & 19).

- **Post-training Application of Learning:** On the 90 day follow-up participants typically reported they had extensively applied training-related knowledge and skills to their jobs. The mean rating was 7.85 (on a scale of 0 to 10), slightly less than the mean application rating of 9.05 anticipated at the time of training (Tables 11 & 13).

- **Correlates of Application:** The strongest correlates of post-training application of learning (page 17) were initial ratings of training relevance to the participant's organization (r=.664, p<.001, N=25), and follow-up reports of resources and barriers in the organization (r=.494, p=.009, N=27).

- **Action Plan Progress:** Participants on average reported moderate progress on action plan goals in the 90 days following training. The mean rating of 3.19 (on a 5 point scale) was less than the mean anticipated progress at the time of training (3.58) but still quite favorable (Tables 11 & 13).

- **Correlates of Action Plan Progress:** The strongest correlates of progress on action plan goals (page 17) were initial training satisfaction ratings (r=.439, p=.007, N=37), encountered resources and barriers (r=.432, p=.005, N=40), and the extent of post-training application of learning (r=.504, p=.007, N=27).

- **Lack of Progress:** Less than 8% of participants indicated that NIC could have done anything differently to assist them where they fell short of estimated progress on action plan goals. About 47% indicated that they themselves could have been more focused or prioritized better. Over 73% indicated that their agency or organization could have better supported their progress on action plan goals (pages 15-16).

- **Resources and Barriers:** Findings suggest participants had difficulty accurately estimating post-training resources and barriers to the application of learning and action plan progress (pages 17 & 19).

- **Bias and Discrimination:** Analyses revealed no evidence that participant satisfaction or benefit from training was significantly influenced by discrimination or bias based on age, race, or gender (page 19).

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the series discuss findings from the analyses of evaluation data collected during the 2005-2006 pilot phase of the project. Bulletin 1: *Participant Demographics, Overall Evaluation of Training, and Applicability Ratings* (February 2007) provides a demographic sketch of 458 training participants, a discussion of early results from the evaluation project, and a preliminary profile of organizational resources and barriers to the implementation of training objectives in the workplace. Bulletin 2: *Participant Evaluation of Trainers* (July 2007) focuses on 34 trainers involved in 20 Academy Division trainings during the pilot phase of the evaluation, and provides a discussion of both quantitative and qualitative findings. Bulletin 3: *Training Results, Activity Level Changes, and Implementation Results* (February 2008) discusses findings from a series of multivariate analyses of the relationships between demographic characteristics, training quality, post-training environments, and the successful transfer of training to the workplace. These bulletins are available at www.nicic.org/research.[2]

While previous bulletins in the series focus on the evaluation of Academy Division trainings conducted during the pilot phase of the project, the current bulletin focuses on the evaluation of more recent Jails Division and Prisons Division trainings. The four trainings evaluated for the current bulletin include:
- Inmate Behavior Management (IBM: 08-J2301)
- Administering the Small Jail (ASJ: 08-J2801)
- Conducting Prison Security Audits (CPSA: 08-P3202)
- How to Run a Direct Supervision Housing Unit: Training for Trainers (DSHU: 08-J2202)

As indicated in Table 1, demographic data and initial evaluation data were collected from both participants (N=84) and trainers (N=11). The decision to collect data from trainers as well as training participants arose from observations during the pilot phase that suggested an imbalance in the evaluation design. Collecting data on trainer demographics and trainer evaluation of participants, in addition to data collected from participants, facilitates the examination of issues such as potential age, race, or gender bias, and provides external or corroborative measures of participant attitude and attention levels. Evaluations based on more symmetric data provide a basis for the examination of previously inaccessible areas, e.g., potential relationships between participant-reported learning and trainer ratings of participant attention, or between participant-reported satisfaction and trainer experience and education.

Initial evaluation data were collected in person via written forms. All forms included the necessary instructions and contact information for relevant NIC and CwRC personnel. A representative from NIC's Division of Research and Evaluation (R&E) was available at each training to introduce the evaluation, answer questions, and administer the necessary forms. Response rates were exceptionally high, averaging 99% (Table 1). This was due in large part to the personal involvement of R&E representatives during

data collection, a revised evaluation protocol that included fewer and shorter surveys, and a combined information sheet and consent form that clearly communicated the purpose of the evaluation and the expectation of cooperation. Given that NIC paid all training-related expenses, including travel, accommodations, and per diem, and provided the trainings at no cost to participants, the research team concluded that stronger language communicating an expectation of cooperation was appropriate. The previously used "voluntary" language was revised to read:

> *All trainers and training participants taking part in the [training name] program are expected to participate in the evaluation. Please give your full attention to each evaluation activity, as you would to any other aspect of the training program.*

Nonetheless, trainers and participants were informed they were free to decline to answer any question that made them uncomfortable, and that standard precautions would be taken to protect their privacy.

Follow-up evaluation data were collected from training participants beginning 90 days after conclusion of the training. Paper surveys were administered via US Mail. The follow-up data collection procedure is based on Dillman's Total Design Method (2000).[3] Although this multi-stage protocol requires several months to execute, it is a well established method of maximizing survey response rates. Where the required four mailings fail to produce a completed follow-up, the revised evaluation protocol provides for additional contacts by email and/or phone. Phone or email follow-up contacts by a person known to the potential respondent typically overcomes issues associated with outdated mailing addresses,

procrastination, etc. In the case of ASJ, these additional contacts were made by the CPS in charge of the program and resulted in completed follow-ups for the final six participants, and a 100% response rate. In the case of IBM, however, additional contacts were not attempted with the three non-respondents because their agencies indicated they were no longer employed there. Nonetheless, follow-up response rates have been exceptional thus far in that every participant qualified to complete a follow-up has done so. As noted in the table, follow-up data collection is still underway for CPSA and DSHU.

The current bulletin provides a discussion of findings from numerous univariate and bivariate analyses conducted on evaluation data collected to date (Table 1). A future supplemental bulletin will be issued after the collection and analysis of the remaining follow-up data. In addition to updated univariate and bivariate results, that bulletin will also include multivariate findings.

For more information on the future directions of the bulletin series, and the evaluation project, see ***Future Directions*** (page 21).

TABLE 1: Data Sources and Response Rates, 2008

Training Information						Completed Evaluation Forms (N=675)							Response Rates	
Training abbreviation, Code, and Dates; Number of Participants and Trainers					Participant Demo-graphics	Trainer Demo-graphics	Participant Evaluation of Training	Participant Evaluation of Trainers	Trainer Evaluation of Class	Trainer Evaluation of Participants	Participant Action Plan Follow-up	Initial	Follow-up
IBM	08-J2301	12/2 - 12/8/07	21	4	21	4	21	80	3	81	18 [a]	97.7%	85.7%
ASJ	08-J2801	1/13 - 1/18/08	22	3	22	3	22	66	3	65	22	99.1%	100.0%
CPSA	08-P3202	6/2 - 6/6/08	18	3	18	3	18	36	3	18 [b]	[c]	100.0%	[c]
DSHU	08-J2202	6/9 - 6/19/08	24	2	24	2	24	48	2	48	[c]	100.0%	[c]
TOTALS			85 [d]	12 [e]	85 [d]	12 [e]	85 [f]	230 [f]	11 [g]	212 [g]	40	99.0%	93.0%

[a] Three Inmate Behavior Management participants were no longer employed by the sending agency at the time of the 90 day action plan follow-up.

[b] CPSA training was split into three groups (1 trainer and 6 participants each) for most of the training; each trainer evaluated only those 6 participants.

[c] Action plan follow-ups for Conducting Prison Security Audits and Direct Supervision Housing Units: Training for Trainers will conclude in November 2008.

[d] There were 84 unique participants (one participant attended two trainings.)

[e] There were 11 unique trainers (one trainer was used in two trainings.)

[f] A condensed, combined form was used to allow participants to evaluate the training overall, and each trainer individually.

[g] A condensed, combined form was used to allow trainers to evaluate participants individually, and as a group.

Findings

Findings from the analyses of data from 675 survey instruments[1] completed by 84 training participants and 11 trainers from December 2007 to August 2008 (Table 1) are presented in five sections to follow. The first section, **Demographic Profiles**, describes the demographic and background characteristics of participants and trainers in the four programs. The next section, **Satisfaction**, presents findings from both the participants' evaluation of training and trainers, and from the trainers' evaluation of participants. The third section, **Learning and Application**, presents findings from a participant self-assessment of learning, training applicability, and anticipated resources and barriers to implementing training content in their organizations. The fourth section, **Action Plan Follow-up**, covers post-training application of learning, encountered resources and barriers, and progress on action plan goals 90 days after training. (This section currently includes follow-up data only for IBM and ASJ; follow-ups for CPSA and DSHU are currently in progress.) The final section, **Bivariate Relationships**, discusses significant relationships between demographics, training satisfaction, learning, action plan progress, and other variables of interest.

In an effort to provide information of interest to a variety of stakeholders, both summary and detailed findings are presented where feasible. Numerous large tables are utilized to provide sufficient detail for readers interested in specific trainings, and to some extent, individual trainers and participants.

Demographic Profiles

Demographics for the 84 training participants and 11 trainers are provided in Tables 2 through 6. Note that one participant attended two trainings, and one trainer presented at two trainings; in both cases Inmate Behavior Management (IBM) and Administering the Small Jail (ASJ). Nonetheless, where appropriate, both analyses and discussion of findings utilize 85 participants and 12 trainers. For example, despite the fact that 84 persons in total attended the four trainings, there were 85 valid participant evaluations of training. Likewise, despite intuitively making sense to include only 84 participant demographic profiles in the analyses, training-based analyses must include all participants who attended each individual training, even if some participants attended multiple trainings.

Demographic and background data were collected on trainers and participants to address a variety of research and policy objectives. For example, analysis of demographic data, in conjunction with training evaluation data, can provide evidence of the extent to which target audiences are reached, and the extent to which training

participants are selected and treated without bias based on demographic characteristics. Although some demographic variables are typically considered sensitive, e.g., age, race, gender, salary, etc., the agency cannot make objective or credible statements about reaching target audiences or conducting trainings in unbiased ways without collecting and analyzing such data. Findings regarding demographic-based correlations and differences in participant satisfaction, learning, action plan progress, or other areas are presented in **Bivariate Relationships** (page 16).

In terms of gender ratio, overall about two-thirds (68.2%) of training participants were male. How to Run a Direct Supervision Housing Unit: Training for Trainers (DSHU) had a somewhat more balanced gender mix (41.7% female) than the other trainings, where men outnumbered women almost 3 to 1 (Table 2). Interestingly, both DSHU trainers were female, while overall the gender ratio among trainers was more similar to that observed among participants: almost three-fourths were male (Table 3).

Race and ethnicity among participants and trainers overall (Tables 2 and 3) were similar to national proportions for whites (about 80%) and African Americans (about 15-18%). Hispanics, however, were somewhat under-represented. Though constituting about 15% of the general population, none of the trainers and only 6% of participants indicated Hispanic heritage. DSHU participants most closely mirrored national proportions for race and ethnicity, while Conducting Prison Security Audits (CPSA) had the highest percentage of minorities (44.5%). Overall, 21.5% of participants and 18.2% of trainers were minorities.

Note that the apparent underrepresentation of Hispanic participants and trainers may be, at least in part, an artifact of the demographic forms used. Although participant and trainer demographic forms allowed respondents to indicate multiple racial/ethnic categories, the forms did not emphasize this with specific instructions or separate questions (and no respondents indicated multiple categories.) In an effort to collect more precise and accurate data, future versions of the demographic forms may provide such instructions, e.g., "mark all that apply" and/or inquire about Hispanic/Latino ethnicity in a separate follow-up item.

About one-third of training participants reported holding a bachelors degree or higher at the time of training. On average, educational attainment among CPSA and DSHU participants was somewhat higher than among IBM and ASJ participants. Not surprisingly, trainers reported higher educational attainment overall than participants; almost three-fourths held at least bachelors degrees, and over half held masters degrees.

As expected, a large majority of IBM, ASJ, and DSHU participants reported adult jails as their primary area of

employment (these are all Jails Division trainings.) Likewise, most participants of CPSA, a Prisons Division training, reported working in adult prisons and/or central administration. Another frequently reported area of employment was training, especially among DSHU participants. Again, this is to be expected given that DSHU was a training for trainers program.

Although training participants reported a variety of job titles, some predictable patterns are evident. For example, a large majority (86.4%) of ASJ participants were jail administrators, while most CPSA participants were either wardens (38.9%) or security chiefs (16.7%). Most DSHU participants were either line staff (45.8% correctional officers and sergeants) or training/classification officers (25%). Trainers likewise reported a variety of job titles in their current or most recent non-consulting positions, the most common being captain (27.3%) or jail administrator (18.2%).

Participant salaries were generally concentrated in the $20,000 to $60,000 range (73.9%). CPSA participants, however, reported somewhat higher salaries. Although no specific analyses attempted to identify the sources of these

Table 2: Participant Demographic Information (Categorical Variables)

	IBM N	IBM %	ASJ N	ASJ %	CPSA N	CPSA %	DSHU N	DSHU %	Overall N	Overall %
Gender										
Female	6	28.6	6	27.3	5	27.8	10	41.7	27	31.8
Male	15	71.4	16	72.7	13	72.2	14	58.3	58	68.2
Overall	21		22		18		24		85	100.0
Race/Ethnicity										
White/Caucasian	20	95.2	19	86.4	10	55.6	17	73.9	66	78.6
African-American	1	4.8	2	9.1	7	38.9	3	13.0	13	15.5
Hispanic/Latino	0	0.0	1	4.5	1	5.6	3	13.0	5	6.0
Other	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Overall	21		22		18		23		84	100.0
Education										
H.S. Diploma/GED	13	61.9	13	59.1	5	27.8	10	41.7	41	48.2
Associate Degree	2	9.5	3	13.6	3	16.7	4	16.7	12	14.1
Bachelor's Degree	5	23.8	5	22.7	5	27.8	9	37.5	24	28.2
Master's Degree	1	4.8	1	4.5	4	22.2	1	4.2	7	8.2
Doctorate Degree	0	0.0	0	0.0	1	5.6	0	0.0	1	1.2
Overall	21		22		18		24		85	100.0
Area of Employment [a]										
Adult Jails	19	90.5	22	100.0	4	22.2	20	83.3	65	76.5
Adult Prisons	0	0.0	0	0.0	12	66.7	3	12.5	15	17.6
Juvenile Detention	2	9.5	0	0.0	3	16.7	1	4.2	6	7.1
Central Administration	5	23.8	2	9.1	8	44.4	1	4.2	16	18.8
Research	2	9.5	0	0.0	0	0.0	0	0.0	2	2.4
Training	6	28.6	6	27.3	1	5.6	11	45.8	24	28.2
Community Corrections	4	19.0	1	4.5	2	11.1	2	8.3	9	10.6
Adult Other	0	0.0	1	4.5	2	11.1	0	0.0	3	3.5
Juvenile Other	0	0.0	2	9.1	1	5.6	1	4.2	4	4.7
Overall	38		34		33		39		144	[a]
Job Title/Duties										
Corrections Officer	2	9.5	1	4.5	0	0.0	5	20.8	8	9.4
Sergeant	2	9.5	0	0.0	1	5.6	6	25.0	9	10.6
Training/Classification Officer	4	19.0	0	0.0	0	0.0	6	25.0	10	11.8
Lieutenant	0	0.0	1	4.5	1	5.6	2	8.3	4	4.7
Unit Manager	0	0.0	0	0.0	1	5.6	1	4.2	2	2.4
Inmate Programs Director	2	9.5	0	0.0	0	0.0	0	0.0	2	2.4
Security Chief/Director [b]	0	0.0	0	0.0	3	16.7	2	8.3	5	5.9
Captain/Major	0	0.0	0	0.0	1	5.6	1	4.2	2	2.4
Jail Administrator [b]	9	42.9	19	86.4	0	0.0	0	0.0	28	32.9
Warden/Superintendent [b]	0	0.0	0	0.0	7	38.9	0	0.0	7	8.2
County Sheriff	1	4.8	1	4.5	0	0.0	0	0.0	2	2.4
Director, Military Corrections [b]	0	0.0	0	0.0	2	11.1	0	0.0	2	2.4
Other	1	4.8	0	0.0	2	11.1	1	4.2	4	4.7
Overall	21		22		18		24		85	100.0
Salary										
Less than 20,000	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
20,001 - 40,000	14	66.7	10	45.5	0	0.0	2	8.3	26	31.0
40,001 - 60,000	5	23.8	8	36.4	6	35.3	17	70.8	36	42.9
60,001 - 80,000	0	0.0	3	13.6	5	29.4	5	20.8	13	15.5
80,001 - 100,000	1	4.8	1	4.5	1	5.9	0	0.0	3	3.6
100,000 +	1	4.8	0	0.0	5	29.4	0	0.0	6	7.1
Overall	21		22		17		24		84	100.0
Agency Type										
State	0	0.0	0	0.0	12	66.7	2	8.3	14	16.5
County	21	100.0	20	90.9	3	16.7	20	83.3	64	75.3
Municipal	0	0.0	2	9.1	0	0.0	0	0.0	2	2.4
Federal Other (Military)	0	0.0	0	0.0	3	16.7	0	0.0	3	3.5
Foreign (Canadian)	0	0.0	0	0.0	0	0.0	2	8.3	2	2.4
Overall	21		22		18		24		85	100.0

[a] More than one area of employment possible for each participant
[b] Includes assistant, associate, deputy, etc.

Table 3: Trainer Demographic Information (Categorical Variables)

	N	%
Gender		
Female	3	27.3
Male	8	72.7
Overall	11	100.0
Race/Ethnicity		
White/Caucasian	9	81.8
African-American	2	18.2
Overall	11	100.0
Education		
H.S. Diploma/GED	1	9.1
Associate Degree	2	18.2
Bachelor's Degree	2	18.2
Master's Degree	6	54.5
Overall	11	100.0
Most Recent (non-consulting) Job Title		
Captain	3	27.3
Director of Detention	1	9.1
Jail Administrator	2	18.2
Warden	1	9.1
Juvenile Services Administrator	1	9.1
Population Management Administrator	1	9.1
Bureau Chief Security Operations	1	9.1
Chief Deputy Director	1	9.1
Overall	11	100.0
Highest Base (non-consulting) Salary		
40,001 - 60,000	2	28.6
60,001 - 80,000	2	28.6
80,001 - 100,000	2	28.6
100,000 +	1	14.3
Overall	7	100.0
Most Recent (non-consulting) Agency Type		
State	5	45.5
County	6	54.5
Overall	11	100.0

Table 4: Participant Demographic Information (Continuous Variables)

(Survey items are paraphrased below.)	IBM			ASJ			CPSA			DSHU			Overall		
	N	Median	Range	N	Median	Range	N	Median	Range	N	Median	Range	N	Median	Range
Age	21	37.0	27-60	22	44.5	25-54	15	43.0	34-55	23	39.0	28-61	81	40.0	25-61
Years on current job	20	2.25	0-30	22	3.25	0.17-27	18	2.50	1-25	22	8.50	0.33-25	82	3.25	0-30
Years experience in juvenile/adult corrections	16	8.75	0.67-28	4	6.00	0.83-19	12	17.00	4-26	13	10.00	5-17	45	10.00	0.67-28
Expected retirement year	11	2022	2014-2043	17	2017	2011-2048	16	2015	2010-2025	20	2021	2010-2038	64	2020	2010-2048
Directly supervise this number of staff	19	6	0-41	22	14	1-32	18	6	0-244	22	5	0-45	81	6	0-244
Ultimately responsible for this number of staff	18	36	0-565	20	20	5-72	17	13	0-555	22	25	0-176	77	24	0-565
Number of staff at participant's office/facility	20	41	5-565	22	23	5-72	16	35	6-250	24	65	13-1,300	82	34	5-1,300
Total number of staff in participant's agency	17	58	5-565	21	36	5-250	15	2,600	11-60,000	18	135	40-1,500	71	85	5-60,000
Offender population at participant's facility	19	130	16-1,100	21	95	10-235	13	250	0-1,500	23	450	66-6,000	76	130	0-6,000
Offender population at participant's agency	17	130	0-1,100	21	95	10-235	18	15,500	0-175,000	19	675	100-10,000	75	192	0-175,000

Table 5: Trainer Demographic Information (Continuous Variables)

(Survey items are paraphrased below.)	N	Median	Range
Age	11	52.0	43-61
Years experience in juvenile/adult corrections	11	25.0	15-40
Directly supervised this number of staff [a]	11	8	0-30
Ultimately responsible for this number of staff [a]	11	85	0-4,000
Responsible for this number of inmates [a]	11	330	0-100,000
Approximate number of times previously conducted this training	11	16	3-100
Approximate number of times previously conducted similar trainings	9	25	3-200

[a] In current or most recent regular (non-consulting) position

Table 6: Items specific to Direct Supervision Training Participants

	Yes	%
Currently work in a direct supervision facility	11	47.8%
Agency currently building a direct supervision facility	14	60.9%
Agency is hiring or training staff for a new direct supervision facility	17	73.9%
Currently applying direct supervision principals in a non-direct supervision facility	10	43.5%

CPSA participants were slightly older, on average, than DSHU or IBM participants. The median age for trainers was 52; they ranged from 43 to 61 (Table 5). Trainers reported a median of 25 years experience in corrections. Participants averaged over 3 years on their current jobs and about 10 years total experience in corrections (Table 4). DSHU participants, on average, had been on their current jobs much longer than participants of the other trainings. On the other hand, CPSA participants reported more total experience in corrections (17 years) than participants in the other trainings (6–10 years). Likewise, CPSA participants indicated being somewhat closer to retirement. The large differences between the number of agency staff and offenders reported by CPSA participants, relative to other training participants, reflect the fact that state correctional agencies are typically larger than county correctional agencies (Table 4).

Demographic findings specific to DSHU participants are presented in Table 6. Over 78% (N=18) of the 23 training participants who responded to the items shown in Table 6 indicated that they were either currently working in a direct supervision facility (N=11) or were applying direct supervision principles in a non-direct supervision facility (N=10). Note that three participants marked "yes" to both of these items. Those participants apparently either worked in multiple facilities, or misunderstood one of the items.

differences, it seems reasonable to speculate that they stem, at least in part, from: a) CPSA participants being generally more advanced in their careers, as measured by reported job titles (Table 2), total years experience in corrections (Table 4), and expected retirement date (Table 4), and/or b) CPSA participants being concentrated in state and federal agencies, while the other training participants were concentrated in county agencies. Not surprisingly, trainers also reported somewhat higher salaries on average in their most recent non-consulting positions, with 71.5% earning at least $60,000 annually, compared to about 26% of participants in that salary range.

As mentioned above, with the exception of CPSA, most training participants (91%) were affiliated with county agencies. Two-thirds of CPSA participants were affiliated with state agencies, while the remainder were divided between federal (military) and county agencies. Of note, two DSHU participants worked for Canadian organizations. All trainers had been affiliated with state (45.5%) or county (54.5%) agencies in their most recent non-consulting positions.

The median age for training participants was 40 years, though they ranged from 25 to 61 (Table 4). ASJ and

Participant and Trainer Satisfaction

Summary and detailed findings from the analyses of data regarding participant and trainer satisfaction are provided in Tables 7 through 10. Most of the data analyzed for this section concern participant satisfaction with their trainers and various aspects of the training. However, trainers were also asked to evaluate participants, individually and collectively, on several dimensions throughout the training.

Participant Evaluation of Trainers and Training

At the conclusion of each training, participants were asked to evaluate the training and trainers by rating a series of items on a 1 to 5 scale. Although some items were negatively worded on the survey, these items were recoded for purposes of scaling and analysis such that higher scores represent more favorable responses. Participants were also asked to comment on the strengths and limitations of each trainer, and to describe what would have made the training more useful to their job.

On average participants responded very favorably on the nine overall evaluation items presented in the upper section of Table 7. The overall mean rating of 4.52 (N=82, SD=0.53) indicates that participants on average agreed to strongly agreed with the items in this section. Ratings were slightly more mixed, though still favorable, regarding adequacy of the time allotted to cover the material, and the extent to which the physical context (accommodations, setting, etc.) added value to the training. Overall, DSHU participants rated their training slightly higher than participants of other trainings.

Participants also responded very favorably on the trainer evaluation items in the center section of Table 7. (Note that these are mean ratings for trainers as a group; mean ratings for individual trainers are provided in Table 8.) In all four trainings participants rated trainers very highly overall, and on each individual area. The overall mean rating of 4.77 (N=230, SD=0.33) indicates that participants on average strongly agreed with the items in this section. The lowest trainer evaluation ratings were given by IBM participants on the extent to which their trainers encouraged interaction with students outside of classroom instruction. Nonetheless, a mean score of 4.08 indicates that IBM participants, on average, agreed that their trainers encouraged interaction outside the classroom.

When asked to describe what would have made the training program more useful to their jobs, 54 participants (63.5%) provided handwritten comments. Findings from a

Table 7: Participant Satisfaction																
(1 = Strongly Disgree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree)																
(Survey items are paraphrased. Negatively worded items were recoded/rephrased for purposes of scaling and analysis.)	IBM			ASJ			CPSA			DSHU			Overall		
	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
Participant Evaluation of Training Overall															
Training content met my expectations for learning	19	4.21	1.36	20	4.20	1.54	18	4.61	1.04	23	4.87	0.34	80	4.49	1.16
Physical context (setting, accommodations, etc.) added value	19	3.79	0.98	21	4.52	0.68	18	4.50	1.15	23	4.17	0.65	81	4.25	0.90
Adequate time to cover training objectives	19	4.00	1.25	21	3.86	1.01	18	4.00	1.33	22	4.64	0.73	80	4.14	1.11
Pace was conducive to learning	19	4.21	0.85	21	4.38	0.59	18	4.17	1.15	24	4.75	0.44	82	4.40	0.80
Learned new information	19	4.74	0.45	21	4.90	0.44	18	4.22	1.17	23	4.87	0.34	81	4.70	0.70
Would recommend training to others with similar jobs	19	4.53	1.02	21	4.57	1.21	18	4.78	0.94	24	4.96	0.20	82	4.72	0.91
Training was relevant to my organization overall	19	4.58	0.77	21	4.81	0.40	18	4.39	1.20	24	4.88	0.34	82	4.68	0.73
Training was relevant to my job duties in particular	19	4.68	0.75	21	4.76	0.89	18	4.50	1.15	23	4.87	0.46	81	4.72	0.83
Range of material covered was appropriate	19	4.42	0.84	21	4.81	0.40	18	4.22	1.35	24	4.75	0.44	82	4.57	0.83
Overall	19	4.35	0.46	21	4.54	0.34	18	4.38	0.84	24	4.75	0.32	82	4.52	0.53
Participant Evaluation of Trainers (as a group)															
Possessed appropriate background in the field	80	4.58	0.94	66	4.92	0.27	36	5.00	0.00	48	4.92	0.28	230	4.81	0.61
Demonstrated expertise in the field	80	4.75	0.91	66	4.73	0.87	36	5.00	0.00	48	4.96	0.20	230	4.83	0.72
Displayed personal interest in participants and their learning	80	4.59	0.63	66	4.83	0.41	36	4.92	0.28	46	4.83	0.49	228	4.76	0.51
Were enthusiastic about the training	80	4.59	1.08	66	4.52	1.19	36	4.92	0.28	48	4.96	0.20	230	4.70	0.93
Encouraged interaction with students outside the classroom	80	4.08	1.20	66	4.77	0.52	36	4.86	0.42	48	4.40	0.98	230	4.47	0.95
Were confident, not timid or hesitant	80	4.88	0.37	66	4.91	0.34	36	5.00	0.00	48	4.83	0.81	230	4.90	0.46
Appeared credible and professional	80	4.88	0.37	66	4.95	0.21	36	5.00	0.00	48	4.96	0.20	230	4.93	0.26
Appear to have prepared adequately prior to training	80	4.94	0.33	66	4.91	0.29	36	4.89	0.32	48	4.92	0.28	230	4.92	0.31
Appeared to be organized at the beginning of training	80	4.59	0.88	65	4.91	0.29	36	4.86	0.35	48	4.67	0.56	229	4.74	0.63
Introduced new and stimulating ideas about training topic(s)	80	4.54	0.69	66	4.80	0.40	36	4.50	0.56	48	4.71	0.46	230	4.64	0.56
Delivered training in a manner that facilitated learning the objectives	80	4.63	0.99	66	4.86	0.35	36	4.83	0.45	48	4.88	0.33	230	4.78	0.66
Presentation helped me see material's applicability to my job	80	4.65	0.58	66	4.86	0.35	36	4.61	0.64	48	4.71	0.46	230	4.72	0.51
Recommend continuing to use these trainers to deliver the training	80	4.79	0.44	66	4.86	0.35	36	5.00	0.00	48	4.94	0.24	230	4.87	0.35
Overall	80	4.65	0.42	66	4.83	0.26	36	4.88	0.17	48	4.82	0.29	230	4.77	0.33
Participant Suggestions for Training Improvement	IBM			ASJ			CPSA			DSHU			Overall		
(…what would have made the training more useful to your job?)	N	%		N	%		N	%		N	%		N	%	
No response	8	38.1		7	31.8		4	22.2		12	50.0		31	36.5	
Postive/complementary responses	7	33.3		5	22.7		4	22.2		5	20.8		21	24.7	
Neutral comments, e.g., "nothing"	4	19.0		3	13.6		3	16.7		4	16.7		14	16.5	
Criticisms and/or suggestions for improvement:	2	9.5		7	31.8		7	38.9		3	12.5		19	22.4	
Recommendations for improving training process	0	0.0		1	4.5		5	27.8		2	8.3		8	9.4	
Recommendations for improving training content	2	9.5		4	18.2		1	5.6		0	0.0		7	8.2	
Misc/general suggestions for improvement	0	0.0		2	9.1		1	5.6		1	4.2		4	4.7	
Overall	21	100.00		22	100.00		18	100.00		24	100.00		85	100.00	

content analysis of their responses are provided in the lower section of Table 7. Interestingly, despite the fact that this question was essentially a probe for criticism, 24.7% of participants (and 38.9% of responses) included only positive or complementary comments, e.g., "It was great the way it was! Thank you." Another 16.5% of participants (and 25.9% of responses) included only neutral comments, e.g., "nothing" or "n/a." In fact, even the 36.5% (N=31) of participants who left the item blank provided useful "data" in a sense, given that the vast majority of them otherwise completed the survey, i.e., all 31 responded to all or nearly all of the closed-ended items, and about three-fourths of them (23 of 31) provided handwritten comments in response to other open-ended items. This suggests that many or most of these participants left the item blank because they had no criticisms or suggestions for improvement, not because they overlooked the item or refused to answer it.

Overall only 19 of 85 participants (22.4%) offered criticisms or suggestions for training improvement. However, train-ings differed in the percentage of participants offering suggestions for improvement, ranging from 9.5% of IBM participants to 38.9% of CPSA participants. Nonetheless, these differences should not be interpreted as valid comparative measures of training quality or participant satisfaction; a variety of analyses produced no evidence to support this interpretation. For example, despite the fact that CPSA participants were four times more likely than IBM participants to offer a program criticism or suggestion for improvement, participants of both trainings rated the quality of their training and trainers similarly. Likewise, across all trainings, participants who offered suggestions for training improvement did not differ from other participants to any practical extent on any tested measure of training satisfaction, learning, or action plan progress.

However, analyses did produce some evidence to suggest that more educated, experienced, and higher ranking participants were more likely to recommend training improvements. For example, 29.5% of participants with college degrees suggested various training improvements, compared to 14.6% of participants without college degrees. Likewise, 30.1% of participants with 10 or more years on their current jobs suggested training improvements, compared to 19.6% of those who had been on their current jobs less than 10 years. Finally, higher ranking personnel (as inferred from job title and salary) were also more likely to suggest training improvements. For example, 45.5% of wardens, sheriffs, and military corrections directors suggested training improvements, compared to 33.3% of sergeants, and 12.5% of corrections officers. In terms of salary, 15.4% of those earning less than $40,000 recommended program improvements, compared to 36.4% of those earning over $60,000. Taken together, findings suggest that narrative or written recommendations regard-ing program improvements are more a function of participant education, experience, and rank, than of training quality or participant satisfaction.

Despite the fact that suggested improvement rates appear to be inappropriate *measures* of training quality, program improvement recommend-dations may nonetheless be useful in *improving* training quality. In the lower section of Table 7 certain patterns are evident in participant suggestions for making the training more useful to their jobs. For example, the majority of recommen-dations from ASJ partici-pants referenced various improvements to training

Table 8: Participant Evaluation of Trainers														
(1 = Strongly Disgree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree)														
(Survey items are paraphrased. Negatively worded items were recoded/rephrased for scaling and analysis.)	IBM (N=20)					ASJ (N=21-22)				CPSA (N=11-13)				DSHU (N=23-24)	
	Trainer Mean				SD	Trainer Mean			SD	Trainer Mean			SD	Trainer Mean	SD
	1	2	3	4		1	2	3		1	2	3		1 2	
Possessed appropriate background in the field	4.60	4.50	4.60	4.60	0.94-1.00	4.95 4.91 4.91			0.21-0.29	5.00 5.00 5.00			0.00	4.92 4.92	0.28
Demonstrated expertise in the field	4.80	4.65	4.75	4.80	0.89-0.99	4.73 4.73 4.73			0.88	5.00 5.00 5.00			0.00	4.96 4.96	0.20
Displayed personal interest in participants and their learning	4.55	4.45	4.65	4.70	0.47-0.76	4.86 4.86 4.77			0.35-0.53	5.00 4.92 4.85			0.00-0.38	4.83 4.83	0.49
Was enthusiastic about the training	4.60	4.55	4.60	4.60	1.10	4.59 4.41 4.55			1.18-1.26	4.91 4.92 4.92			0.28-0.30	4.96 4.96	0.20
Encouraged interaction with students outside the classroom	4.05	4.20	4.15	3.90	1.15-1.33	4.77 4.77 4.77			0.53	4.91 4.75 4.92			0.28-0.62	4.38 4.42	0.97-1.01
Was confident, not timid or hesitant	4.90	4.80	4.90	4.90	0.31-0.52	4.95 4.82 4.95			0.21-0.50	5.00 5.00 5.00			0.00	4.83 4.83	0.82
Appeared credible and professional	4.90	4.80	4.90	4.90	0.31-0.52	4.95 4.95 4.95			0.21	5.00 5.00 5.00			0.00	4.96 4.96	0.20
Appear to have prepared adequately prior to training	5.00	4.80	5.00	4.95	0.00-0.62	4.91 4.91 4.91			0.29	4.91 4.83 4.92			028-0.39	4.92 4.92	0.28
Appeared to be organized at the beginning of training	4.60	4.55	4.60	4.60	0.76-0.94	4.91 4.90 4.91			0.29-0.30	4.91 4.83 4.85			0.30-0.39	4.67 4.67	0.56
Introduced new and stimulating ideas about training topic(s)	4.55	4.50	4.55	4.55	0.69-0.76	4.82 4.82 4.77			0.39-0.43	4.73 4.42 4.38			0.47-0.67	4.71 4.71	0.46
Training delivery facilitated learning the objectives	4.65	4.55	4.65	4.65	0.99-1.05	4.86 4.86 4.86			0.35	4.91 4.83 4.77			0.30-0.60	4.88 4.88	0.34
Presentation helped me see material's applicability to my job	4.65	4.65	4.65	4.65	0.59	4.86 4.86 4.86			0.35	4.73 4.58 4.54			0.47-0.78	4.71 4.71	0.46
I recommend continuing to use this trainer to deliver the training	4.85	4.60	4.85	4.85	0.37-0.60	4.91 4.82 4.86			0.29-0.39	5.00 5.00 5.00			0.00	4.92 4.96	0.20-0.28
Overall	4.67	4.58	4.68	4.67	0.38-0.52	4.85 4.82 4.83			0.26-0.27	4.92 4.85 4.86			0.15-0.20	4.82 4.82	0.29-0.30

content, while CPSA participants were more likely to suggest improvements to the training *process*.

Recommendations from ASJ participants included:
- *If they could have spent more time on inmate behavior.*
- *Although this covered small jails there should have been a little more coverage on 72 hour holding facilities.*
- *Discuss legal issues in more depth, do not shy away from applicable case law.*
- *Ability to have 4 hours, during daylight hours to visit local attractions.*
- *It may be NIC strategy, but I would have liked more time on some of the problems and spend a lot more time on configuring staffing in our jail.*
- *If my assistant was able to attend as well.*
- *The attendance of my support staff.*

Recommendations from CPSA participants included:
- *Spend a little more time on defining what is expected for the out-processing.*
- *Knowing that I was going to audit secure 1 facility to help prepare myself, to not go in with maximum security mind set.*
- *First train on objectives, audit instrument.*
- *For those attendees with little experience in conducting audits, I don't think they learned anything. I was hoping to learn more on actually*

- *conducting audits.*
- *On the first day tour all facilities prior to the audit.*
- *It would have been more useful to have a mock review and discussion for a day or two prior to the actual audit. To review areas and the institutions beforehand.*
- *Everything from audit responsibilities to the friendships.*

Recommendations from IBM participants included:
- *A lot of agencies do not have programs, perhaps a brief description of how to implement them could be helpful.*
- *More information on programs.*

Recommendations from DSHU participants included:
- *Actual trip to a direct supervision housing unit would allow those who have never seen one or been in that situation a chance to experience that.*
- *Conduct training in a "direct supervision pod" to further help those who do not have direct supervision.*

Note that only recommendations for training improvement are included here. Given the repetitive nature of the neutral and positive comments, they are adequately summarized as such in the lower section of Table 7, rather than reproduced here verbatim.

In addition to evaluating the training overall, and recommending program improvements, participants were also asked to evaluate each trainer individually. Trainer evaluation results from the center section of Table 7 are broken down for individual trainers in Table 8. Immediately apparent in the table is that participants rated all trainers highly and uniformly across areas. No individual trainer stood out in a negative way, nor was any particular area of weakness identified. In relative terms the lowest rated area, apparent in both Tables 7 and 8, was the extent to which IBM trainers encouraged interaction with students outside the classroom. Nonetheless, these ratings were still quite high in the absolute sense.

Such uniformly high ratings, as evidenced by high means and low standard deviations across Table 8 and the middle section of Table 7, suggest that participants were very satisfied with their trainers and were unable to identify an particular area of weakness. Although low variation in ratings can signal problems in the evaluation, participant comments regarding trainer strengths and limitations (Table 9) provide some corroboration for their uniformly positive trainer evaluation ratings.

After scoring each individual trainer on the items appearing in Table 8, participants were asked, "What else would you like NIC to know about the strengths and/or limitations of these trainers? Please provide separate comments for each trainer." Participant responses are summarized in Table 9. The table summarizes 252 opportunities for participants to comment on trainer strengths and limitations:

Table 9: Trainer Strengths and Limitations

Content summary of responses to the open-ended item: *What else would you like NIC to know about the strengths, and/or limitations of these trainers? Please provide separate comments for each trainer.*

	Strength Comments		Limitation Comments		No Response		Totals	
	N	%	N	%	N	%	N	%
IBM								
Trainer 1	14	66.7	0	0.0	7	33.3	21	100.0
Trainer 2	12	57.1	2	9.5	8	38.1	22	104.8
Trainer 3	14	66.7	0	0.0	7	33.3	21	100.0
Trainer 4	13	61.9	0	0.0	8	38.1	21	100.0
Total	53	63.1	2	2.4	30	35.7	85	101.2
ASJ								
Trainer 1	16	72.7	0	0.0	6	27.3	22	100.0
Trainer 2	15	68.2	1	4.5	7	31.8	23	104.5
Trainer 3	14	63.6	1	4.5	7	31.8	22	100.0
Total	45	68.2	2	3.0	20	30.3	67	101.5
CPSA								
Trainer 1	9	50.0	0	0.0	9	50.0	18	100.0
Trainer 2	9	50.0	0	0.0	9	50.0	18	100.0
Trainer 3	8	44.4	0	0.0	10	55.6	18	100.0
Total	26	48.1	0	0.0	28	51.9	54	100.0
DSHU								
Trainer 1	19	79.2	1	4.2	5	20.8	25	104.2
Trainer 2	18	75.0	1	4.2	5	20.8	24	100.0
Total	37	77.1	2	4.2	10	20.8	49	102.1
Overall	**161**	**63.9**	**6**	**2.4**	**88**	**34.9**	**255**	**101.2**

Responses may not total 100% because three comments referenced both strengths and limitations.

- IBM (21 participants x 4 trainers) = 84
- ASJ (22 participants x 3 trainers) = 66
- CPSA (18 participants x 3 trainers) = 54
- DSHU (24 participants x 2 trainers) = 48

In total, participants provided 164 handwritten responses, only 6 of which contained any references to trainer limitations, i.e., only 2.4% of "commenting opportunities" and 3.7% of actual comments referred to trainer limitations. (Note that three participants commented on both trainer strengths and limitations.) Overall, 65 of 85 participants (76.5%) provided at least one handwritten comment, and 60 of those 65 (92.3%) commented only on trainer strengths.

Participants' evaluation ratings of their trainers, taken together with narrative comments in response to the trainer strengths/limitations item, clearly indicate that participants were very satisfied with each of their trainers. Although previous trainer evaluations[4] have produced lower mean ratings and somewhat greater variation, there too, narrative responses to open-ended questions provided some corroboration for the findings. For the current evaluation, all available evidence suggests a very high level of participant satisfaction with their training and trainers, on all measured dimensions.

Trainer Evaluation of Participants

At the beginning of each training, trainers were given evaluation forms with participant names and instructed to rate each participant on three dimensions throughout the training:

- Attitude/Demeanor
- Participation/Attention
- Learning/Comprehension

Instructions were to:

Record preliminary ratings with light marks (a line, X, or check) throughout the training, as you form impressions about each participant, and then record your final ratings with darker marks (fill in the entire circle) near the end of the training. In determining your final ratings, please consider all of your observations of each participant throughout the training, i.e., both when you were presenting and observing, and both during and between sessions.

Results are summarized in Table 10. On average trainer ratings of participant attitude, participation, and learning were split almost equally between acceptable (50.4%) and outstanding (48.8%). However, ratings varied somewhat by training. CPSA and IBM trainers rated the majority of their participants as outstanding in each of the three areas, while ASJ and DSHU trainers rated the majority of their participants as appropriate/acceptable. Overall, less than 1% of the 635 total trainer ratings were "inappropriate/ unacceptable." These 635 ratings, however, reflect the fact that each of the 85 participants was rated in multiple areas by multiple trainers. From the perspective of participants, rather than ratings, 3.5% (3 of 85) of all participants, and 12.5% of DSHU participants (3 of 24) received unacceptable ratings in one or more areas. One DSHU trainer rated the participation/ attention of these three participants as unacceptable. The other DSHU trainer rated one of these three participants as unacceptable on both participation/attention and learning/comprehension. Nonetheless, trainers overall were clearly satisfied with the vast majority of their training participants, rating over 96% of them acceptable or outstanding in attitude, participation, and learning.

Trainers were also asked to evaluate the participants of each training as a group. In all cases, trainers reported that participants gelled into a cohesive, cooperating whole, as opposed to remaining fragmented along individual or jurisdictional lines, or

Table 10: Trainer Evaluation of Participants										
	IBM 4 trainers 21 participants		**ASJ** 3 trainers 22 participants		**CPSA** [a] 3 trainers 18 participants		**DSHU** 2 trainers 24 participants		**Overall** 12 trainers [b] 85 participants [c]	
	N	%	N	%	N	%	N	%	N	%
Attitude/Demeanor										
3 = Outstanding/Exceptional	54	66.7	19	29.2	18	100.0	17	35.4	108	50.9
2 = Appropriate/Acceptable	27	33.3	46	70.8	0	0.0	31	64.6	104	49.1
1 = Inappropriate/Unacceptable	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	81		65		18		48		212	
Participation/Attention										
3 = Outstanding/Exceptional	51	63.0	20	30.8	15	83.3	18	37.5	104	49.1
2 = Appropriate/Acceptable	30	37.0	45	69.2	3	16.7	26	54.2	104	49.1
1 = Inappropriate/Unacceptable	0	0.0	0	0.0	0	0.0	4 [d]	8.3	4	1.9
	81		65		18		48		212	
Learning/Comprehension										
3 = Outstanding/Exceptional	54	66.7	11	17.2	13	72.2	20	41.7	98	46.4
2 = Appropriate/Acceptable	27	33.3	53	82.8	5	27.8	27	56.3	112	53.1
1 = Inappropriate/Unacceptable	0	0.0	0	0.0	0	0.0	1 [e]	2.1	1	0.5
	81		64		18		48		211	
Overall										
3 = Outstanding/Exceptional	159	65.4	50	25.8	46	85.2	55	38.2	310	48.8
2 = Appropriate/Acceptable	84	34.6	144	74.2	8	14.8	84	58.3	320	50.4
1 = Inappropriate/Unacceptable	0	0.0	0	0.0	0	0.0	5	3.5	5	0.8
	243		194		54		144		635	

[a] CPSA training was split into three groups (1 trainer and 6 participants each) for most of the training; each trainer evaluated only those 6 participants.

[b] There were 11 unique trainers (one trainer was used in two trainings.)

[c] There were 84 unique participants (one participant attended two trainings.)

[d] Refers to three participants, one of whom was rated inappropriate by two trainers.

[e] This is the same participant who was rated by both trainers as not displaying appropriate participantation/attention.

Table 11: Participant Learning and Application

(1 = Very Low; 2 = Low; 3 = Medium; 4 = High; 5 = Very High)

(Survey items are paraphrased. Negatively worded items were recoded/rephrased for purposes of scaling and analysis.)		IBM N=20 Mean	SD	ASJ N=22 Mean	SD	CPSA N=17-18 Mean	SD	DSHU N=23-24 Mean	SD	Overall N=82-84 Mean	SD
Participant Self-assessment of Learning											
Knowledge I possessed regarding training topic(s)	Before Training	2.65	1.04	2.41	1.05	3.22	0.81	2.50	0.93	2.67	1.00
	After Training	4.25	0.55	4.36	0.66	4.50	0.51	4.75	0.44	4.48	0.57
Extent to which I was/will be able to apply knowledge regarding training topic(s)	Before Training	2.55	1.10	2.50	0.96	3.53	0.80	2.43	0.79	2.71	1.00
	After Training	4.30	0.66	4.27	0.83	4.41	0.62	4.54	0.59	4.39	0.68
Skills I possessed regarding training topic(s)	Before Training	2.60	1.10	2.59	0.85	3.33	0.59	2.52	1.04	2.73	0.96
	After Training	4.30	0.73	4.45	0.60	4.56	0.62	4.67	0.48	4.50	0.61
Extent to which I was/will be able to apply skills regarding training topic(s)	Before Training	2.90	1.17	2.64	0.85	3.61	0.70	2.54	0.93	2.88	1.00
	After Training	4.25	0.55	4.41	0.67	4.67	0.49	4.67	0.48	4.50	0.57
Positive attitudes I possessed regarding training topic(s)	Before Training	3.35	0.75	3.23	1.15	4.28	0.67	4.04	1.04	3.71	1.02
	After Training	4.55	0.60	4.68	0.48	4.83	0.38	4.88	0.34	4.74	0.47
Extent to which I was/will be able to apply positive attitudes regarding training topic(s)	Before Training	3.60	0.94	3.36	1.09	4.00	0.50	3.50	1.14	3.59	0.99
	After Training	4.65	0.49	4.59	0.59	4.78	0.43	4.71	0.62	4.68	0.54
Overall	Before Training	2.94	0.82	2.79	0.83	3.66	0.54	2.94	0.73	3.06	0.80
	After Training	4.38	0.49	4.46	0.48	4.63	0.38	4.70	0.33	4.55	0.44
Extent to which you anticipate applying what you learned in this training to your job: (0=Not at All; 10=A Great Deal)	N=	13 9.08	1.12	15 9.33	0.90	15 8.20	1.82	20 9.45	1.15	63 9.05	1.35
Anticipated progress on action plan goals: (1=None; 2=Slight; 3=Moderate; 4=Substantial; 5=Exceptional)	N=	15 3.47	0.40	20 3.61	0.85	17 3.37	0.51	23 3.78	0.85	75 3.58	0.72

"cliquing up" into factions or subgroups. Additionally, all trainer responses indicated that the material presented appeared to be very relevant to their group of participants, and neither too complex nor too basic. Finally, in all cases trainers reported that they worked very well as a team, and were a "good fit" for their group of participants.

Participant Learning and Application

Summary and detailed findings from the analyses of data regarding participant learning and the application of learning are provided in Tables 11 and 12. Learning is discussed in terms of pre and post-training knowledge, skills, and attitudes regarding training topics. Of particular interest is the transfer of learning, i.e., the application of training-related knowledge, skills, and positive attitudes in the participant's organization after training, and the identification of resources that facilitate the transfer of learning, and barriers that inhibit the transfer of learning.

Pre and Post-Training Knowledge, Skills, and Attitudes

At the conclusion of each training, participants were asked to rate their level of learning, prior to and after training, in each of three areas: knowledge, skills, and positive attitudes regarding training topics. Participants were also asked to rate the extent to which they had been able to apply each of these prior to training, and the extent to which they anticipated being able to apply them after training. The five point rating scale ranged from very low (1) to very high (5).

With the exception of CPSA, participants of the various

Likewise, participants on average rated their ability to apply knowledge of training topics as low to medium prior to training, and high to very high after training. Participant ratings followed a similar pattern with regard to skills they possessed related to training topics, and ability to apply those skills: low to medium prior to training, and high to very high after training. CPSA participants, on the other hand, rated both their knowledge and skills,

and their ability to apply their knowledge and skills, as medium to high prior to training. This is not surprising given that CPSA participants were more educated, more experienced, and more advanced in their careers, on average, than participants of the other trainings (see Tables 2 and 4, and discussion on pages 5–6.) However, CPSA participants rated their post-training knowledge and skill levels similar to those of other trainings: high to very high. Likewise, CPSA participants rated their post-training ability to apply their training-related knowledge and skills as high to very high.

Participant self-assessment of positive attitudes toward training topics, and their ability to apply those attitudes, followed the same pattern as observed in their knowledge and skill ratings, though with a higher baseline. Participants (again, with the exception of CPSA) generally rated their pre-training positive attitude levels as medium to high, rather than the low to medium ratings assigned to their knowledge and skill levels. CPSA participants also rated their pre-training positive attitudes somewhat higher than their self-ratings of knowledge and skills: high, rather than medium to high. Participants on average, including CPSA participants, rated their post-training positive attitudes toward training topics, and their ability to apply those attitudes, as high to very high.

Clearly, regardless of their perceived levels of learning and application upon entering the training, participants of all trainings generally felt they had achieved high to very high levels of training-related knowledge, skills, and positive attitudes by the end of training. Moreover, findings suggest that participants were generally very confident they would actually apply training-related learning to their jobs. For example, participants were asked to specify any goals they

intended to pursue in their agencies as a result of training, and to estimate the amount of progress they would make on each goal over the next 90 days. Over 88% of participants specified one or more goals and anticipated, on average, moderate to substantial progress on their goals during the three months after training (Table 11). Likewise, participants were asked to estimate on a scale from 0 (not at all) to 10 (a great deal) "the extent to which you anticipate applying what you learned in this training to your job." Participants overall indicated a very high mean application rating of 9.05 (Table 11). Note that while this item appears to be simply a more general reference to the earlier knowledge, skills, and attitude application items, it actually serves a different purpose. The earlier items were designed to measure changes in learning and application as a result of training, from the participant's point of view, immediately after completing the training. The later item, repeated on the 90 day follow-up, was designed to measure perceptions of learning application at different points in time. Thus, while the earlier items simulate pre-post comparisons of both learning and learning application, the later item provides the basis for an actual pre-post comparison of learning application.

Anticipated Organizational Resources and Barriers to the Transfer of Learning

For the last several decades researchers have estimated that staff resistance and other organizational factors typically block up to 90% of training substance from transferring to the workplace.[5] Likewise, although the evaluation of 20 NIC trainings offered during 2005 and 2006 found that measures of training quality and relevance were moderate predictors of learning transfer, organizational measures were the strongest predictors.[6] Thus organizational factors, such as resources and barriers, are especially relevant to the application of training-related knowledge, skills, and positive attitudes in the participant's organization after training.

The organizational resources and barriers listed in Table 12 were derived from content analyses of over 1,300 narrative comments provided by training participants in earlier evaluations.[7] For the four evaluations described in the current bulletin, participants were provided with the list of resources and asked "Which of the following do you consider **resources**, currently in place in your organization or agency, that you expect to draw upon to help you apply what you learned from this training to your job? (Check all that apply.)" Similarly, participants were provided with the list of barriers and asked "Which of the following do you consider **barriers** or **impediments** (i.e., lacking, inadequate, or problematic areas) that you expect to inhibit you from applying what you learned from this training to your job? (Check all that apply.)" Both survey items contained an "other" option with space to write in resources and/or barriers other than those listed.

Results are summarized in Table 12, with the most frequently cited resources and barriers appearing at the top of each section. Overall the most frequently expected resources were management/administrative support, staff development/training, and teamwork. The most frequently expected barriers were workload/ time, funding/infra-structure, and staff/organizational resistance. However, these varied somewhat from training to training, especially for CPSA where, for example, agency structure/policy was a more frequently expected barrier than staff/organizational resistance.

Several patterns are evident in Table 12. Perhaps most important is that *participants on average anticipated more resources than barriers*, expecting to draw on five of the listed resources and be hindered by only two of the listed

Table 12: Anticipated Resources and Barriers to Implementing Training in Participant's Agency/Organization	IBM		ASJ		CPSA		DSHU		Overall	
	N	%	N	%	N	%	N	%	N	%
Resources in the agency/organization participants expect to draw upon to help them apply what they learned in the training to their jobs:										
Management/Administrative Support	16	76.2	14	63.6	12	66.7	20	83.3	62	**72.9**
Staff Development/Training	19	90.5	13	59.1	9	50.0	16	66.7	57	**67.1**
Teamwork (Cooperation within your Agency/Org)	14	66.7	15	68.2	11	61.1	16	66.7	56	**65.9**
Personnel/Staff	18	85.7	17	77.3	5	27.8	13	54.2	53	**62.4**
Existing Programs/Policy	13	61.9	16	72.7	9	50.0	10	41.7	48	**56.5**
Organizational Acceptance	15	71.4	10	45.5	10	55.6	11	45.8	46	**54.1**
Technology	12	57.1	9	40.9	9	50.0	10	41.7	40	**47.1**
Support from a Key Person	12	57.1	14	63.6	4	22.2	9	37.5	39	**45.9**
Cooperation between Agencies/Organizations	12	57.1	9	40.9	6	33.3	10	41.7	37	**43.5**
Time	8	38.1	8	36.4	2	11.1	8	33.3	26	**30.6**
Funding/Infrastructure	9	42.9	6	27.3	4	22.2	5	20.8	24	**28.2**
Community Resources/Volunteers	10	47.6	8	36.4	0	0.0	1	4.2	19	**22.4**
Barriers or impediments (lacking, inadequate, or problematic areas) in the agency/organization participants expect to inhibit them from applying what they learned in the training to their jobs:										
Workload/Time	9	42.9	15	68.2	9	50.0	14	58.3	47	**55.3**
Funding/Infrastructure	7	33.3	10	45.5	12	66.7	8	33.3	37	**43.5**
Staff/Organizational Resistance	8	38.1	4	18.2	2	11.1	12	50.0	26	**30.6**
Management/Administrative Support	3	14.3	2	9.1	4	22.2	4	16.7	13	**15.3**
Staff Development/Training	5	23.8	5	22.7	0	0.0	2	8.3	12	**14.1**
Agency Structure/Policy	3	14.3	1	4.5	5	27.8	2	8.3	11	**12.9**
Support from Key Person	1	4.8	4	18.2	3	16.7	1	4.2	9	**10.6**
Cooperation between Agencies/Organizations	2	9.5	5	22.7	1	5.6	1	4.2	9	**10.6**
County Commissioners/Public	2	9.5	1	4.5	0	0.0	0	0.0	3	**3.5**
You yourself (training participant)	0	0.0	1	4.5	0	0.0	0	0.0	1	**1.2**

Table 13: Participant Action Plan Follow-up									
(Survey items are paraphrased. Negatively worded items were recoded/rephrased for purposes of scaling and analysis.)	IBM			ASJ			Overall		
	N	Mean	SD	N	Mean	SD	N	Mean	SD
90 Day Post-Training Evaluation									
Would recommend training to others with similar jobs	17	**4.35**	1.32	22	**4.27**	1.58	39	**4.31**	1.45
Training was relevant to my organization overall	17	**4.24**	1.30	22	**4.82**	0.39	39	**4.56**	0.94
Training was relevant to my job duties in particular	17	**4.24**	1.30	22	**4.86**	0.35	39	**4.59**	0.94
(...4 = Agree; 5 = Strongly Agree) **Overall**	17	**4.27**	0.99	22	**4.65**	0.60	39	**4.49**	0.81
Extent to which you were able to apply the knowledge/ skils gained from this training to your job: (0=Not at All; 10=A Greal Deal)	10	**7.20**	3.22	17	**8.24**	1.25	27	**7.85**	2.20
Encountered Resources and/or Barriers to Implementing Training in Participants' Agencies/Organizations									
Management/Administrative Support	18	**1.94**	1.66	22	**1.77**	1.38	40	**1.85**	1.49
You yourself	18	**1.72**	1.41	21	**1.86**	1.11	39	**1.79**	1.24
Support from a Key Person	18	**1.72**	1.78	22	**1.73**	1.39	40	**1.73**	1.55
Teamwork (Cooperation within your Agency/Org)	18	**1.00**	1.53	22	**1.59**	1.01	40	**1.33**	1.29
Staff Development/Training	18	**1.22**	1.44	22	**1.18**	1.65	40	**1.20**	1.54
Agency Structure/Policy	18	**0.17**	2.38	22	**1.45**	1.37	40	**0.88**	1.98
Personnel (staffing levels, skills, experience, etc.)	18	**0.28**	1.90	22	**1.05**	1.86	40	**0.70**	1.90
Existing Programs	18	**0.11**	1.64	22	**1.09**	1.23	40	**0.65**	1.49
Organizational Acceptance/Resistance	18	**0.11**	1.45	22	**1.05**	1.70	40	**0.63**	1.64
Other (please specify)	3	**0.00**	0.00	6	**0.83**	1.33	9	**0.56**	1.13
Cooperation between Agencies/Organizations	18	**-0.11**	1.91	22	**0.95**	1.59	40	**0.48**	1.80
Workload/Time	18	**0.11**	1.64	21	**0.10**	1.58	39	**0.10**	1.59
Funding/Infrastructure	18	**-0.83**	1.82	22	**0.64**	1.50	40	**-0.03**	1.79
Overall	18	**0.60**	1.13	22	**1.19**	1.02	40	**0.93**	1.10
Mean progress on participant-identified goals since training: (1=None; 2=Slight; 3=Moderate; 4=Substantial; 5=Exceptional)	18	**2.84**	0.74	22	**3.48**	0.60	40	**3.19**	0.73

has either completed and returned the two page form, or until at least five separate contacts have been attempted by the research team and the CPS in charge of the training. Although most participants respond to the first or second survey mailing, issues such as address change, illness, or procrastination typically require execution of the full follow-up process, including email and/or phone contacts, for one or more participants in each training. The full follow-up process can take 2–3 months. Note that follow-up data are currently available only for IBM and ASJ; follow-up data collection for CPSA and DSHU is currently in progress. Findings from the analyses of these data will be reported in a future bulletin.

Follow-up Evaluation and Action Plan Progress Report

Participant satisfaction with training is a topic of interest for a variety of stakeholders. Measures of satisfaction at the conclusion of training, such as those in Table 7, can provide important insights in this regard. Nonetheless, it is also important to know if, or to what extent, these initial perceptions of satisfaction change over time. Did perceptions of training quality and relevance increase, remain constant, or decrease after returning to the realities of the workplace? Likewise, to what extent were training-inspired goals actually achieved in the workplace? These and related follow-up questions are addressed in the current section.

Several survey items from the initial training evaluation were repeated in the 90 day training action plan follow-up to provide a basis for comparison. For example, when asked if they would recommend the training to others with similar jobs, the mean response for IBM participants dropped slightly from 4.53 (agree to strongly agree) at the conclusion of training (Table 7) to 4.35 on the follow-up (Table 13). Mean responses for ASJ participants on this item also dropped slightly, from 4.57 to 4.27. When asked about the relevance of the training to their organization overall, and to their job in particular, mean responses for IBM participants again dropped slightly from the initial evaluation (Table 7) to the follow-up evaluation (Table 13); mean responses for ASJ participants were almost unchanged. Overall, participant satisfaction ratings remained relatively high at the time of follow-up, despite some slight declines after the conclusion of training and returning to the workplace.

barriers (median results). Another notable pattern is that, from training to training, participants' most frequently expected barriers varied somewhat more than expected resources. This suggests that

participants' agencies face diverse and different challenges despite drawing on similar resource bases to pursue similar missions.

Nonetheless, findings suggest participants overall were confident they could overcome organizational barriers to the extent necessary to make moderate to substantial progress on their training action plan goals, and apply what they learned in training to their jobs (Table 11).

Training Action Plan Follow-up

Summary and detailed findings from the analyses of follow-up evaluation data and action plan progress data are provided in Tables 13 and 14. Per the current evaluation protocol, the follow-up process begins 90 days after the conclusion of training and continues until each participant

The training action plan follow-up also asked participants to rate the extent to which they were able to apply the knowledge/skills gained from the training to their job, on a 0 (not at all) to 10 (a great deal) scale. The mean response for IBM participants was 7.20 (Table 13), down from a mean anticipated application rating of 9.08 at the conclusion of training. ASJ participants also reported somewhat lower follow-up application ratings on average (8.24) than anticipated application ratings (9.33). Nonetheless, follow-up ratings for participants of both trainings remained quite high.

Participants were also asked to rate the amount of progress they had made since the training on any action plan goals they established during training. IBM participants reported a mean progress rating of 2.84 on a 1 to 5 scale, or approximately moderate progress overall (Table 13). This is somewhat lower than the mean progress of 3.47 that IBM participants initially anticipated they would make during this period (Table 11). ASJ participants, on the other hand, reported moderate to substantial progress (3.48) on average on their action plan follow-ups, approximately the same amount of progress they initially anticipated (3.61).

To gauge the extent and utility of post-training contact between participants and trainers, one item on the follow-up asked participants to "Please describe the extent to which your trainers or coaches were useful (or not useful) after the training and how so." Content analysis of participant responses indicated that 52.9% of IBM respondents (9 of 17) and 90% (18 of 20) ASJ respondents had post-training contact with trainers. Trainers provided advice, documents, materials, or other resources to 23.5% of IBM respondents and 25% of ASJ respondents after the training. Likewise, 35.3% of IBM respondents and 75% of ASJ respondents provided a variety of positive comments about the trainers that either directly or indirectly referred to training contact, rather than post-training contact. No participants provided negative or critical remarks about trainers in response to this survey item.

Encountered Resources and Barriers

As demonstrated in previous evaluations[6] the balance of organizational resources and barriers is typically a strong predictor of post-training progress on the implementation of training objectives in the organization. Moreover, the balance of resources and barriers actually encountered by training participants when attempting to execute their action plans in the workplace typically differs somewhat from the anticipated resources and barriers reported at the time of training.[6, 7] Thus the action plan follow-up contained numerous items designed to:
1. Identify resources/barriers that actually helped/ hindered participants in applying what they learned in the training to their jobs.
2. Provide a quantitative basis for comparing encountered resources/barriers with those anticipated at the time of training.
3. Provide a basis for testing relationships between

resources/barriers, learning application, and progress on action plan goals.

In an effort to collect data more suited to the above objectives, the resource and barrier items on the initial training evaluation form were revised for inclusion on the action plan follow-up. Because the original lists of resources and barriers were developed via separate content analyses of participant comments about resources and barriers, they were not quite mirror images of each other. These differences were resolved to permit the merging of resources and barriers into the single list appearing in Table 13. This revised and merged resource/ barrier list was included on the training action plan follow-up with instructions to:

> Please indicate the extent to which you found each of the following to be either barriers (i.e., lacking, inadequate or problematic areas) OR resources in your organization that hindered OR helped you in applying what you learned in the training to your job.

Respondents were asked to rate each item in the newly merged resource/barrier list on a seven point scale from –3 to 3 where negative numbers represent barriers and positive numbers represent resources:

- –3 = substantial barrier
- –2 = moderate barrier
- –1 = slight barrier
- 0 = neither resource nor barrier
- 1 = slight resource
- 2 = moderate resource
- 3 = substantial resource

The revised resource/barrier items and scale permit respondents to distinguish the magnitude of each resource/ barrier item. (Note however that no attempt was made to establish the importance of the various items relative to each other, i.e., the resource/barrier items were not weighted.) Results from data collected on the revised resource/barrier items on the IBM and ASJ action plan follow-ups are summarized in Table 13. Items at the top of the table were more frequently reported as resources while items at bottom were more frequently cited as barriers. For example, participants overall found management/ administrative support to be approximately a moderate resource (1.85). Likewise, participants overall rated staff development/training a slight resource (1.20). Participants on average rated funding/infrastructure and workload/time the lowest, and thus least likely to be resources and most likely to be barriers.

Note that when standard deviations are relatively high (in this case greater than about 1.0) mean scores near zero do **not** indicate that most participants rated the item zero (neither a resource nor a barrier). Instead, this indicates that although the scores averaged out near zero, there was a lot of variation among scores such that the participants who rated the item as a resource approximately equaled those who rated it as a barrier. For example, in the case of

Table 14: Lack of Progress on Action Plan Goals

Content summary of responses to the three-part follow-up item: *For any Action Plan goal in which you did not make as much progress as anticipated: a) What could NIC have done differently in the training to assist you? b) What could you have done differently (during or after the training) to improve your progress? c) What could your agency or organization have done differently to better support you in accomplishing the goal(s)?*

	IBM		ASJ		Overall	
	N	%	N	%	N	%
What NIC could have done differently:						
Positive/complementary comments	6	35.3	11	52.4	17	44.7
Neutral Comments, e.g., "nothing"	13	76.5	12	57.1	25	65.8
Criticisms and/or suggestions for improvements	1	5.9	2	9.5	3	7.9
What you (participant) could have done differently:						
Positive/complementary comments	3	17.6	3	14.3	6	15.8
Neutral Comments, e.g., "nothing"	9	52.9	3	14.3	12	31.6
Criticisms and/or suggestions for improvements	7	41.2	11	52.4	18	47.4
What participant's agency could have done differently:						
Positive/complementary comments	1	5.9	5	23.8	6	15.8
Neutral Comments, e.g., "nothing"	7	41.2	2	9.5	9	23.7
Criticisms and/or suggestions for improvements	11	64.7	17	81.0	28	73.7

Responses to the three sub-items above were analyzed together because many participants provided mixed responses rather than strictly limiting each comment to the appropriate sub-item. Percentages may not total 100 because some comments referenced multiple areas. Overall, 17 of 21 IBM participants and 21 of 22 ASJ participants provided responses to one or more of the sub-items.

For example, 38.9% of IBM participants rated organizational acceptance/ resistance as a barrier (5 slight and 2 moderate), compared to 33.3% who found it to be a resource (2 slight, 3 moderate, 1 substantial). Likewise, 50% of IBM participants rated funding/ infrastructure as a barrier (3 slight, 6 substantial), compared to 22.2% who found it to be a resource (3 slight, 1 substantial). On average 39.7% of IBM participants found these 7 items to be barriers to applying the training to their jobs, 38.9% judged them to be resources, and 21.4% judged them to be neither resources nor barriers to training application. However, 76.7% of IBM participants rated the remaining 5 items to be resources, while only 11.1% judged them to be barriers, and 12.2% neither resources nor barriers. On average the balance of resources and barriers reported by IBM participants was neutral to slightly positive, as reflected by the mean score of 0.60 in Table 13.

workload/time 14 participants suggested that they had adequate time and/or manageable workload such that they found this item to be a resource in applying their training to their job (2 substantially, 9 moderately, and 3 slightly.) On the other hand, 16 participants suggested they had insufficient time or excessive workload to the point that it was a barrier to applying their training to their job (10 slightly, 5 moderately, and 1 substantially.) The remaining 9 participants found workload/time to be neither a resource nor a barrier.

The majority of ASJ participants (63.6%) reported a favorable balance of resources and barriers in the application of training content to their jobs. The remaining 36.4% reported a neutral balance of resources and barriers; no ASJ participants reported a negative balance of resources and barriers. ASJ Participants rated 12 of the 13 items as slight to moderate resources on average. The remaining item, workload/time, was rated as a barrier by 42.9% of ASJ participants (in most cases a slight barrier) compared to 33.3% who considered this issue a resource. On average the balance of resources and barriers reported by ASJ participants was slightly to moderately positive, as reflected by the mean score of 1.19 in Table 13.

IBM participants on average reported a less favorable balance of resources and barriers to applying their training. Although the majority of IBM participants (66.7%) reported a favorable balance of post-training resources and barriers, 33.3% reported a negative balance. IBM participants overall rated 8 of 13 resource/barrier items at 0.28 or lower. Given the high standard deviations on 7 of those items (all except "other"), significant percentages of IBM participants found these issues to be barriers to applying their training.

Lack of Progress on Action Plan Goals

Despite facing a different balance of post-training resources and barriers, and experiencing somewhat different levels of success, both ASJ and IBM participants reported relatively good post-training application of learning, and action plan progress (Table 13). Nonetheless, over 90% of IBM participants and 85% of ASJ participants made less progress than anticipated on at least one action plan goal. Likewise, over 90% of IBM participants and 70% of ASJ participants made less progress on their goals overall than anticipated. Participants were asked on the training action plan follow-up:

> *For any Action Plan goal in which you did not make as much progress as anticipated: a) What could NIC have done differently in the training to assist you? b) What could you have done differently (during or after the training) to improve your progress? c) What could your agency or organization have done differently to better support you in accomplishing the goal(s)?*

Results from a content analysis of participant responses are summarized in Table 14.

Very few participants (7.9%) reported that NIC could have done anything differently in the training to increase their progress on action plan goals (Table 14). On the contrary, despite the fact that this item probed for criticism, nearly half (44.7%) of the respondents wrote positive or complementary remarks about NIC. About two-thirds (65.8%) of respondents wrote neutral comments, e.g., "There was nothing that NIC could do to move progress forward." Note that some participants provided multiple

comments and/or types of comments; percentages may not total 100.

About half of the respondents (47.4%) indicated that they themselves could have done something differently to improve their progress on action plan goals where they fell short of anticipated progress (Table 14). Although responses varied, the most common self-criticism, reported by 10 of the 18 respondents who offered self-criticisms, was that the participant could have been more focused on the goal(s) and/or prioritized better. Only 15.8% of respondents wrote positive or complementary comments about themselves; 31.6% wrote neutral comments.

When asked what their agency or organization could have done differently to better support their action plan progress, 73.7% of respondents provided one or more criticisms or suggestions for improvement (Table 14). Only 15.8% wrote positive or complementary comments, while 23.7% wrote neutral comments. The most commonly cited criticisms or suggestions for better support from their agencies involved workload/time, funding, and staff/organizational resistance.

Clearly participants overall felt the trainings were of high quality and that there was little more NIC could have done in the trainings to improve post-training action plan progress. This is consistent with the high training satisfaction, learning, and applicability ratings discussed previously in the bulletin (Tables 7, 8, 9, & 11). On the other hand, many participants indicated that they themselves, and especially their agencies, could have taken steps to help improve their progress on action plan goals. The most commonly cited agency criticisms were largely consistent with anticipated post-training barriers (Table 12), follow-up reports of encountered barriers (Table 13), and findings from previous evaluations[7] i.e., excessive workload, insufficient funding, and staff resistance. These and other organizational barriers, previously shown to be predictive of post-training action plan progress,[6] may interact with participants' lack of focus or other limitations in non-trivial ways. For example, it is reasonable to suppose that a participant's lack of focus or prioritization may undermine their ability to productively utilize resources or overcome organizational barriers necessary to apply their training and achieve their action plan goals. Relationships between these and other key variables are discussed next.

Bivariate Relationships

Stakeholders need valid and reliable information on the demographics, satisfaction, and learning of persons involved in their trainings, and the extent to which training content is successfully applied in post-training environments. The univariate findings presented thus far can provide some basis for more informed decision-making in a variety of situations. Nonetheless, oftentimes an understanding of bivariate and multivariate relationships between key variables can be a beneficial complement to univariate results.

The current section examines significant bivariate findings obtained thus far. Although analyses revealed several hundred statistically significant differences and correlations, only those most likely to be of some practical significance or interest are included. Findings based on follow-up data should be considered preliminary due to the small number of cases and limited available data; final bivariate results will be available after the conclusion of follow-up data collection for CPSA and DSHU. Multivariate analyses, where feasible, will also be conducted at that time. These and other results based on DSHU and CPSA follow-up data will be reported in a future bulletin.

Correlates of Learning

The strongest bivariate correlate of participant learning was training satisfaction. (Note that although correlations indicate relationships, these relationships are not always causal.) Training satisfaction, as measured by mean scores on the items in the upper panel of Table 7, was significantly correlated with the levels of training-related knowledge, skills, and positive attitudes reported by participants after training ($r=.459$, $p<.001$, N=82). Satisfaction was also significantly correlated with pre to post-training change scores for training-related knowledge, skills, and positive attitudes ($r=.364$, $p=.001$, N=82).

Other significant correlates of learning included:
- participant education (rho=.261, $p=.017$, N=84),
- anticipated application of learning ($r=.370$, $p=.003$, N=63), and
- anticipated action plan progress ($r=.357$, $p=.002$, N=74).

Each of these are positive correlations, i.e., higher ratings on learning are generally associated with higher ratings on each of these measures.

However, learning was also inversely correlated with several variables, including participant:
- age ($r= -.222$, $p=.048$, N=80),
- experience ($r= -.359$, $p=.015$, N=45),
- salary (rho= $-.288$, $p=.008$, N=83), and
- training-related knowledge, skills, and positive attitudes prior to training ($r= -.848$, $p<.001$, N=84).

The inverse correlations indicate that participant self-ratings of learning tended to be higher for younger, less experienced, less knowledgeable, and lower ranking participants (when salary is viewed as a proxy measure of rank).

As discussed earlier in the bulletin, participants generally gave very favorable ratings for both training satisfaction and learning. Nonetheless, there was some variation, and the findings above provide good evidence that this variation was not random. In the bivariate correlations presented above, the p values indicate the probability that the observed relationship was due to chance alone. Values less than .05 (5%) were considered statistically significant. Therefore it is very unlikely that these correlations were

random or chance observations, and thus far more likely that participant-reported learning varied in patterned and predictable ways as described above.

Correlates of Post-training Application of Learning

In the 90 day follow-up evaluation, participants were asked to indicate the extent to which they had been able to apply what they learned in the training to their jobs. Among the evaluation data collected at the time of training, the only correlate of post-training application of learning was the extent to which participants found the training relevant to their organization overall (r=.664, p<.001, N=25). Post-training application of learning was not significantly correlated with anticipated application of learning, antici-pated resources and barriers to post-training application of learning, participant demographics, or any scale measures of training satisfaction, learning, or other data collected during the initial evaluation. Thus post-training application of learning appears to be unrelated to nearly all initial evaluation measures, and difficult for training participants to accurately estimate (although additional follow-up data and multivariate analyses may reveal otherwise.)

In any event, the one correlate identified thus far, perceived relevance of the training to the organization, provides a logical and moderately strong connection between the training itself, and the application of learning in the 90 days after training. This relationship may warrant closer attention in future evaluations, especially if analysis of additional follow-up data reveal no additional correlates or predictors.

Among the data collected on the follow-up evaluation, the strongest correlates of post-training application of learning were:
- the balance of resources and barriers to post-training application of learning (r=.494, p=.009, N=27),
- progress on action plan goals (r=.504, p=.007, N=27), and
- follow-up satisfaction ratings (r=.553, p=.003, N=27).

These positive bivariate correlations indicate that participants who reported greater post-training application of learning also tended to report encountering a more favorable balance of resources and barriers, making more progress on action plan goals, and higher satisfaction ratings. However, it is important to note that the follow-up satisfaction scale used only three of the nine items from the initial training satisfaction scale (see upper panels of Tables 13 and 7) and was more heavily focused on training relevance. Thus it is not surprising that training satisfaction, as measured by the follow-up (essentially a proxy for relevance) emerged as a significant correlate of post-training application of learning.

Correlates of Action Plan Progress

Among the evaluation data collected at the time of training, the only significant correlate of later progress on action plan goals was training satisfaction. The overall scale was significant (r=.439, p=.007, N=37) as were five of the nine

items on the scale, i.e., those referring to pace, new information, relevance to organization, relevance to job, and range of material (see upper panel of Table 7). For the individual items, the correlation coefficient, r, ranged from .326 to .431, while p values ranged from .008 to .049. Participants who reported greater progress on action plan goals during the 90 day follow-up were generally those who had reported higher satisfaction levels overall and higher ratings on each of the five significant items.

Post-training progress on action plan goals was also significantly correlated with several variables on the follow-up evaluation. Participants who reported greater progress on action plan goals were more likely to also report:
- encountering a more favorable balance of resources and barriers in the workplace (r=.432, p=.005, N=40),
- higher post-training application of learning (r=.504, p=.007, N=27), and
- higher follow-up satisfaction ratings (r=.371, p=.020, N=39).

These are logical and intuitive correlates of action plan progress. Of some concern, however, is the lack of a significant correlation between estimated action plan progress and follow-up reports of action plan progress (r=.175, p=.339, N=32). This suggests participants generally have some difficulty accurately estimating their action plan progress.

It can also be beneficial to view action plan progress *relative to progress estimates*, rather than in the absolute sense, and thus examine the correlates of estimate accuracy. Findings indicate that participants who fell short of estimated action plan progress by the largest margins were generally those who:
- rated their pre-training knowledge, skills, and attitudes higher (r= −.397, p=.027, N=31),
- anticipated more post-training resources (r= −.424, p=.016, N=32),
- anticipated greater post-training application of learning (r= −.605, p=.004, N=21), and
- estimated more action plan progress in 90 days (r= −.651, p<.001, N=32).

While these correlates may seem obvious, taken together they suggest

*a pattern of overestimation
and overexpectation
that culminates in falling short
of action plan goals.*

These findings suggest the need to better address realistic self-appraisal and goal setting in the action planning process.

The Impact of Post-training Resources and Barriers

Previous evaluations[6] have shown the balance of resources and barriers to be a better multivariate predictor of post-training implementation progress than either participant demographics or measures of training quality, relevance, or satisfaction. In the current evaluation, the impact of post-training resources and barriers may help explain the difficulty most participants have in accurately estimating post-training application of learning and action plan progress. (In both cases estimates at the time of training were not significantly related to 90 day follow-up reports, and 78% of participants fell short of estimated progress.) In fact, evidence suggests participants may overestimate both learning application and action plan progress at least in part because they do not seem to be very good at estimating the resources and barriers that will help or hinder them in pursuing those goals. (Despite there being considerable aggregate level agreement among participants as to the most common resources and barriers, participants individually were not very accurate at estimating the number or balance of resources and barriers they would later encounter.) For example, as noted above, participants who fell most short of their goals generally anticipated more post-training resources to draw on; yet there was no significant correlation between anticipated resources and encountered resources (or between anticipated barriers and encountered barriers). On the other hand, the balance of resources and barriers encountered by participants **was** significantly correlated with both post-training application of learning (r=.494, p=.009, N=27) and action plan progress (r=.432, p=.005, N=40). In other words,

participants generally were not very accurate in estimating resources and barriers, and yet those resources and barriers turned out to be significantly related to both the extent of post-training application of learning, and action plan progress.

Demographic-based Correlations and Differences

Demographic-based correlations and differences in training satisfaction, learning, post-training application of learning, and action plan progress can provide important insights for stakeholders. Analyses conducted in the course of the current evaluation revealed numerous significant bivariate correlations and differences based on participant gender, age, race, and other demographic variables. The most important theme to emerge from the findings is that despite collecting and analyzing initial and follow-up data on several hundred variables,

the evaluation produced no evidence of demographic-based bias or discrimination.

Participant demographic variables, though extensively intercorrelated, as expected, were not significantly correlated with participant satisfaction scales, post-training application of learning, or action plan progress. Although most participant demographic variables were significantly correlated with learning, all observed relationships appear logical and fail to indicate bias or discrimination.

Intercorrelation of Demographic Variables

Numerous predictable correlations exist among participant demographic variables. For example, older participants generally reported more experience in their field (r=.510, p=.001, N=42). Likewise, higher salaries were more often reported by participants who were more experienced (r=.499, p=.001, N=44), older (r=.305, p=.006, N=80), and more educated (r=.295, p=.006, N=84). Potentially more informative is the finding that experience differed significantly by gender, $t(43)= -2.401$, p=.021, with men reporting a mean of 12.72 years experience (SD=6.86, N=30) while women reported a mean of 7.82 years (SD=5.52, N=15). There were no other significant differences or correlations between gender, age, race, education, salary, or years on the current job. Note that in this section race refers only to Black and White; insufficient data were available for other racial/ethnic backgrounds. With the exception of a possible under-representation of Hispanics (see page 4) this is not surprising, given the small number of participants involved.

Patterns in Trainer Ratings of Participants

Evidence suggests trainers recognized, and possibly identified with, more knowledgeable and experienced participants. For example, trainers generally assigned higher attitude/demeanor ratings to participants who had reported:

- more education (rho=.219, p=.044, N=85)
- more years experience (r=.307, p=.040, N=45)
- higher salaries (rho=.268, p=.014, N=84)
- greater knowledge of training topics prior to training (r=.346, p=.001, N=84)

On the other hand, trainer-assigned attitude ratings were inversely correlated with participant-reported learning during training (r= −.338, p=.002, N=84) i.e., participants who indicated learning less during the training were more likely to be given higher attitude ratings by trainers. While this may seem counterintuitive, it makes sense in light of the finding that trainers generally assigned higher attitude ratings to participants who reported higher levels of education, experience, and training-related knowledge going in to training, and these participants (with higher pre-training baselines) were less likely to show large pre-post change scores on learning (r= −.848, p<.001, N=84).

However, as discussed earlier and summarized in Table 10, trainers were clearly satisfied with training participants overall, rating over 96% of them as acceptable or outstanding in attitude, participation, and learning. Thus the identified patterns in trainer ratings of participant attitude were almost exclusively due to distinctions between ratings of acceptable and outstanding. Moreover, despite the fact that trainers clearly recognized more knowledge and experienced participants, evidence suggests that:

1. ***Participants generally perceived trainers to be fair and unbiased***, i.e., participant satisfaction with trainers (Tables 7 & 8) was quite high, and not significantly correlated with trainer ratings of participants.

2. ***Trainers were in fact fair and unbiased*** with respect to participant demographic backgrounds, i.e., there were no significant differences or correlations in trainer ratings of participants based on age, race, or gender. With regard to the correlates of higher attitude ratings, it seems reasonable that participants with more education, experience, and prior knowledge of training topics would appear more confident, knowledgeable, or positive during training, and attract higher ratings from trainers. Moreover, trainer ratings of participants were not significantly related to participants' post-training application of learning or action plan progress.

Demographics and Learning

Analyses revealed several significant differences and correlations between participant demographic variables and the various measures of learning. Not surprisingly, participants who reported higher levels of education and experience were also more likely to report higher levels of training-related knowledge, skills, and positive attitudes ***prior to training*** (rho=.250, p=.022, N=84 and r=.342, p=.021, N=45, respectively). Salary was also a significant correlate of pre-training knowledge levels (rho=.267, p=.015, N=83), probably due in large part to salary being correlated with education and experience. There was no significant difference between men and women in reported pre-training knowledge levels. However, Black participants reported significantly higher mean levels than Whites: 3.49 (SD=.65) versus 2.96 (SD=.83), $t(20.7)= -2.58$, p=.017.

Younger (r= –.222, p=.048, N=80) and more educated (rho=.261, p=.017, N=84) participants reported achieving higher levels of training-related knowledge, skills, and positive attitudes ***by the end of training***. Likewise, there was a slight, but significant difference between the mean post-training levels report by Blacks (4.79) and Whites (4.52), t(76)= –2.08, p=.041. There were no significant relationships or differences in post-training learning levels with regard to gender, experience, or salary.

The only significant demographic correlates of learning, as measured by the extent of ***pre to post-training changes***, were participant experience and salary. Less experienced participants (r= –.359, p=.015, N=45) and those earning lower salaries (rho= –.288, p=.008, N=83) generally reported larger gains in learning during the training. (As noted previously, these participants were also more likely to report lower pre-training baselines; it is not surprising they would report relatively larger pre-post gains.) There were no significant differences or relationships with regard to gender, race, age, or education.

Demographics, Resources, and Barriers

The remaining relationships of interest involve significant differences and correlations between several demographic variables and post-training resources and barriers to the application of learning.

Female training participants were more optimistic than males with regard to the number of resources they expected to draw on to help them apply what they learned in the training to their jobs. At the conclusion of training, women on average expected to draw on about 7 of the 12 resources shown in Table 12, while men on average anticipated drawing on about 5 of the 12, t(83)=2.77, p=.007. However, there was no significant difference between men and women in the number of barriers they anticipated, t(83)=1.071, p=.287. Likewise, there was no significant difference between men and women in the balance of resources and barriers they reported encountering in the 90 days after training, t(38)=.516, p=.609. Thus despite the fact that women were initially more optimistic with regard to anticipated resources, they later faced a similar balance of resources and barriers as reported by men.

While gender was the only significant demographic correlate of anticipated resources, age was the only significant demographic correlate of anticipated barriers, and encountered resources and barriers. Older participants were more likely to anticipate fewer barriers in applying the training to their jobs (r= –.303, p=.006, N=81), and more likely to report on the follow-up that they had encountered a more favorable balance of resources and barriers (r=.472, p=.002, N=40).

Analyses revealed no significant differences or correlations with anticipated or encountered resources and barriers among the remaining demographic variables. (Note that there were insufficient follow-up data to test for significant differences based on race.)

No Evidence of Bias or Discrimination

In many cases, findings that are of no statistical significance may nonetheless be of considerable practical significance. In the current evaluation for example, participant satisfaction, as measured by both the initial nine item training evaluation scale (Table 7 upper panel) and the three item follow-up evaluation scale (Table 13 upper panel), was not significantly correlated with participant demographic variables, i.e., participant satisfaction did not vary by age, race, gender, etc.[8] Likewise, there were no significant differences in post-training application of learning or action plan progress based on age, race, gender, or other demographic variables.

It is likely that any significant bias or discrimination in training based on demographic variables would have manifested in significant differences in one or more evaluation measures for the affected group. The lack of such findings, together with broadly favorable evaluation ratings from both participants and trainers, suggests that the trainings were appropriate, beneficial, and unbiased.

Summary and Recommendations

This bulletin addresses the evaluation of four FY08 NIC training programs: Inmate Behavior Management, Administering the Small Jail, Conducting Prison Security Audits, and How to Run a Direct Supervision Housing Unit: Training for Trainers (Table 1). The initial evaluation includes:

- participant and trainer demographics
- participant satisfaction with training and trainers
- trainer assessment of participants
- participant self-assessment of learning
- anticipated application of learning, resources and barriers, and action plan progress

The 90 day follow-up evaluation includes:

- participant satisfaction with training
- application of learning
- encountered resources and barriers
- action plan progress

Initial data collection is complete; follow-up data collection is in progress. Thus far univariate and bivariate analyses have been conducted on initial and follow-up data from 675[1] participant and trainer surveys (Table 1). The major findings to date include:

1. **Response rates** were excellent: 99% on initial surveys and 93% on follow-ups.

2. **Participant satisfaction** with training and trainers was consistently high in all areas, at the conclusion of training and 90 days later. About 64% of participants wrote narrative comments on the initial evaluation; 92% on the follow-up evaluation. Content analyses of these comments strongly support the quantitative findings. Satisfaction was one of the strongest correlates of post-training application of learning, and progress on action plan goals.

3. **Trainers rated** participants' attitude/demeanor, participation/attention, and learning/comprehension as appropriate (50.4%) or outstanding (48.8%) in nearly all cases. Less than 4% of participants received a rating of inappropriate/unacceptable in any of the three areas.

4. **Participant learning**, as measured by self-assessment of both post-training levels, and pre-post changes, was quite high. More than 97% of participants reported learning gains; about 80% reported relatively large gains. However, self-reported learning was not a significant correlate of post-training application of learning or action plan progress.

5. **Post-training application of learning** was reported at high levels on the 90 day follow-up. About 89% of participants indicated 6 or above on a scale where 10 was the highest level of application; 74% indicated 8 or above.

6. **Progress on action plan goals** during the 90 days following training was moderate overall. About 85% of participants reported moderate or substantial progress. Less than 15% reported slight or no progress overall.

7. **Organizational resources and barriers** were among the strongest correlates of post-training application of learning and action plan progress. However, on the 90 day follow-up participants typically reported having encountered a less favorable balance of resources and barriers than anticipated at the time of training.

8. **Overestimation** of post-training application of learning and action plan progress was widespread, despite reports of high satisfaction, good application, and moderate action plan progress. On the follow-up about 61% of participants reported lower application of learning than they had earlier estimated; about 44% reported much lower. About 78% of participants fell short of anticipated progress on action plan goals overall; about 40% fell far short of anticipated progress.

9. **Lack of progress on action plan goals** was addressed via a series of open-ended questions on the follow-up. Content analyses of narrative responses indicate that less than 8% of participants believe NIC could have done anything differently to improve their progress. About 47% indicated that they themselves could have been more focused or prioritized better. About 73%, however, indicated that their agency/organization could have facilitated their progress in a variety of ways; most comments referenced workload/time, funding, and staff/organizational resistance.

10. **No evidence of bias or discrimination** emerged from analyses conducted to identify irregularities in the data. With few exceptions, there were no statistically significant relationships among logically unrelated variables, e.g., race and satisfaction, or gender and action plan progress. The few exceptions, mostly related to self-reported learning and demographic variables, appear to be of no practical significance.

Based on these and other findings, consideration should be given to the following recommendations:

1. Future evaluations should reexamine the demographic correlates of learning to confirm the absence of bias.

2. Future evaluations should provide for an assessment of the extent to which trainings reach the target audience.

3. Based on the observed pattern of overestimation among participants, future trainings may need to address the issue of realistic appraisals of self and organization in the action planning process.

4. Future evaluations should provide for a more thorough examination of participants' perceptions of training relevance to the organization overall—a strong correlate of learning transfer, and the only significant correlate identified in the initial evaluation.

Future Directions

This bulletin, like the previous three, provides a variety of training evaluation results that can enhance understanding of training programs and facilitate program improvements to better serve the field. Factors such as training participant satisfaction, learning, and post-training action plan progress, and the relationships between these factors, provide insight to guide design of more efficient and streamlined trainings and training evaluations. These improvements, together with the future directions of this evaluation project and the bulletin series, are discussed below.

Among the central findings of the evaluation are that participants were clearly satisfied with training, felt they learned new skills and knowledge relevant to their work, and extensively applied the training to their jobs. Findings indicate that participants felt all four trainings were of high quality and that NIC could not have done anything more in the trainings to improve post-training action plan progress. Nonetheless, most participants felt their progress on action plan goals could have been better if they themselves, and especially their agencies, had taken additional steps after the training to improve their progress. However, findings reveal that participants typically had some difficulty accurately estimating the post-training organizational resources and barriers they would encounter in the course of applying their training on the job, and the amount of progress they would make on action plan goals. Results such as these suggest that future trainings should focus increased attention on assisting participants in how to form realistic appraisals of what they and their organization can do in the post training action plan. One way to do this in training is to devote time to discussing participant perceptions of training relevance together with an examination of how individual organizational resources and barriers can affect and even interact with one another to facilitate or inhibit post-training progress on action plans.

Given that recent evaluations of NIC trainings have consistently demonstrated that participants are satisfied with what they learn and apply from training, a logical next step is to automate the evaluation process, streamline it, and make it more transparent by moving all of the evaluation steps to a web-based system. For those who are unfamiliar with web-based evaluations, a brief summary of its advantages and disadvantages follow below.

Web-based evaluation systems allow for very fast collection, analysis, and dissemination of training evaluation results.[9] Once pilot-tested and in place, we hope that a NIC web-based training course evaluation system will allow instructors, supervisors, and administrators to receive the results of evaluations within a few weeks after the close of an assessment period. We anticipate that the training evaluation results would contain averages and standard deviations of all Likert-scale items, as well as narrative responses to open-ended questions. Open-ended comments could be automatically sorted and searched by key words, thus generating lists of action-oriented recommendations. In addition, administrators would be able to review aggregate training course evaluation data by division and instructor.

Another benefit of web-based evaluation systems is flexibility.[9] In addition to each training course evaluation containing a set of common core items, instructors and/or administrators can add customized items measuring specific objectives that may be unique to an individual course. In fact, a library of potential questions could be built and drawn upon by NIC Correctional Program Specialists, instructors, administrators, and evaluators as needed.

Another advantage of web-based evaluation systems is convenience.[9] Assuming that computers and the Internet are conveniently available, NIC training participants and instructors can complete course evaluations on their own time instead of at the end of a course, in a hurried or cursory manner. In this way, respondents can provide more detailed and thoughtful responses. To illustrate, in a recent web-based evaluation of a graduate management course, students provided four times as many comments as students completing a paper-based version of the same evaluation form.[10]

Cost-savings is another advantage of web-based evaluations. To illustrate, in one comparison study between paper-based and web-based evaluations of a distance learning course,[11] delivering a web-based evaluation instead of a 22-item paper-based evaluation to 327 participants cost $18.75 instead of $568.60, a savings of 97%. In web-based courses, the savings increase rapidly as the number of participants' increases, since the number of evaluations adds practically zero cost.

Perhaps one of the most important advantages of a web-based evaluation system is data warehousing.[9] Compiling all training course evaluation data in a common database provides for efficient analysis of trends. Trend data would be very helpful to NIC administrators for planning and evaluation. In fact, NIC instructors could be granted limited access to their own trend data so that they could review the history of evaluation data for a specific course, and subsequently monitor the effectiveness of any improvement activities they might make.

With respect to disadvantages of web-based evaluations, the response rates are often lower than in-class evaluations. Although many comparisons have been made between paper-based and web-based response rates, "they are usually as unproductive as attempts to determine the superiority between distance and traditional learning."[10] This is because there are many "process-related" measures, such as instructor support, participant interest,

instrument quality, speed at which evaluation results are given back, etc., that are very important in influencing response rates. Although these process measures are important issues, the quality of the overall system is more important than the particular data collection process used.[12]

Another possible disadvantage to web-based evaluations is concern over anonymity and/or confidentiality of the evaluation data provided by participants. This is an easy obstacle to overcome because participant identifiers can be removed from the submitted evaluation.[9]

Another concern about web-base evaluations is that there are no assurances that training participants will read and respond to email requesting participation in the evaluation.[9] However, with proper advance notice, participants can be encouraged and reminded throughout their training to participate in all of the training's evaluation components.

As with any type of evaluation, it is important to foster a culture that embraces web-based course evaluation.[9] Instructors, training directors and administrators can help increase response rates by demonstrating commitment to the web-based evaluation process. One of the best ways to structure the development and implementation of a web-based evaluation system is to encourage all constituents to feel they have had some input into the project.

Future bulletins in the series will present findings from the remaining 2008 follow-up evaluations, and additional findings from data collected on Correctional Leadership Development and Management Development during the pilot phase of the evaluation project (2005-2006).

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Notes

[1] Some survey forms were combined, i.e., participants evaluated multiple trainers on a single form; trainers evaluated multiple participants on a single form.

[2] The location of the bulletins is subject to change. If a search of the NIC website does not locate the bulletins, please contact Dr. James Wells at jbwells@cwrc.us or (859) 806-5748 for copies.

[3] Dillman, D. A. (2000). *Mail and telephone surveys: The total design method* (2nd ed.). New York: Wiley.

[4] Wells, J., Minor, K., and Parson J. (2007, July). *NIC Research Bulletin 2: Participant Evaluation of Trainers.*

[5] See Ilian, H. (2004). Levels of levels: Making Kirkpatrick fit the facts and the facts fit Kirkpatrick. In B. Johnson, V. Flores, & M. Henderson (Eds.), Proceedings of the 6th Annual Human Services Training Evaluation Symposium 89-104. Berkeley, CA: California Social Work Education Center.

[6] Wells, J., Minor, K., and Parson J. (2008, February). *NIC Research Bulletin 3: Training Results, Activity Level Changes, and Implementation Results*.

[7] Wells, J., Minor, K., and Parson J. (2007, February). *NIC Research Bulletin 1: Participant Demographics, Overall Evaluation of Training, and Applicability Ratings*.

[8] Although some demographic-based significant differences and correlations were observed with respect to participant learning, these appear to be reasonable and legitimate, and do not suggest bias or discrimination in training.

[9] McGourty, J., Scoles, K., & Thorpe, S. (2002) *Web-based Student Evaluation of Instruction: Promises and Pitfalls*. Paper presented at the 42nd Annual Forum of the Association for Institutional Research, Toronto, CA.

[10] Hmieleski, K., Champagne, M. (September/October, 2000). Plugging in to Course Evaluation. *The Technology Source* (http://ts.mivu.org/).

[11] Kronholm, E. A., Wisher, R. A., Curnow, C. K., & Poker, F. (1999). The transformation of a distance learning training enterprise to an Internet base: From advertising to evaluation. Paper presented at the Northern Arizona University NAU/Web99 Conference, Flagstaff, AZ.

[12] Theall, M. (November, December, 2000). Electronic Course Evaluation Is Not Necessarily the Solution. *The Technology Source* (http://ts.mivu.org/).