Evaluating the Effectiveness of Fire Training Programs Administered by the Wyoming Department of Fire Prevention and Electrical Safety

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Certification Statement

I hereby certify that this paper constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions, or writings of another.

Signed:

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Abstract

The problem was there was no method to comprehensively evaluate the effectiveness of fire training programs administered by the Wyoming Department of Fire Prevention and Electrical Safety (WDFPES) Training Division. The purpose of the research project was to identify methods to evaluate the effectiveness of the WDFPES offered fire training programs. Using descriptive research, a detailed analysis of the problem was conducted to identify possible methods of evaluation. Four research questions were chosen to discern the methods of evaluation used by non-fire related organizations, the National Fire Academy (NFA), similar state fire training agencies, and the methods of evaluation currently used by the WDFPES. To answer the research questions, an extensive literature review was completed, questionnaires were mailed to similar state fire training agencies, interviews were conducted the NFA Evaluation Program Contract Service Provider, the Wyoming State Fire Training Director, and with government and industrial occupations. Numerous methods of evaluation and examples from non-fire related organizations were discovered as part of the literature review. It was also determined the WDFPES and the other contacted organizations primarily evaluate the immediate student reactions and measurable student learning after each course. Further evaluations of behavioral changes and long-term results are generally not conducted. By contrast, the NFA conducts long-term evaluations of both students and their supervisors to evaluate behavioral changes and long-term results. As a result from the applied research, it was recommended the WDFPES Training Division develop a comprehensive, systematic, and thorough evaluation system for all fire training programs offered. The evaluation system should include explicit long-term goals, systematic procedures to accomplish the goals, clearly defined criteria to evaluate the effectiveness of activities performed, and a data management system to collect information and produce reports demonstrating progress toward the defined goals.
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The Wyoming Department of Fire Prevention and Electrical Safety (WDFPES) Division of Fire Service Training (Training Division) is responsible to provide fire training opportunities to local volunteer, combination, and career fire and emergency service organizations throughout the state. The Training Division assists local fire service organizations by regularly offering entry level firefighting courses, fire apparatus operation courses, advanced officer development courses, and numerous other fire related training programs. However, the Training Division does not utilize a comprehensive evaluation system to assess the effectiveness of training programs offered to these agencies.

The problem is there currently is no method to comprehensively evaluate the effectiveness of fire training programs administered by the WDFPES Training Division. The purpose of this applied research project is to identify methods of evaluating the effectiveness of fire training programs administered by the WDFPES Training Division. The following four research questions were chosen to address the problem and purpose statements using descriptive research methods: What relevant methods of evaluation are used by non-fire related organizations to evaluate effectiveness of training programs? What methods of evaluation does the National Fire Academy (NFA) use to evaluate effectiveness of NFA offered training programs? What methods of evaluation are used by similar state fire training agencies to measure the effectiveness of fire training programs? What methods of evaluation are currently being used by the WDFPES Training Division to measure the effectiveness of fire training programs?
Background and Significance

The Wyoming Department of Fire Prevention and Electrical Safety was created by the Wyoming State Legislature as a regulatory agency in 1963 (Wyoming Department of Fire Prevention and Electrical Safety, 2010). The State Fire Marshal position was created as an appointed agency administrator to oversee this organization. Thus, the WDFPES is commonly referred to as the Wyoming State Fire Marshal’s Office. The agency is comprised of three separate divisions: (a) Fire Prevention, (b) Electrical Safety, and (c) Training. The Fire Prevention Division is primarily responsible to administer fire inspections and plan reviews. The Electrical Safety Division is principally responsible to administer licensing requirements for electricians and for the inspection of electrical installations. Both of these divisions provide services throughout the state where home rule has not been adopted by a local jurisdiction. The Training Division is responsible to provide numerous services throughout the state including: implementation of fire related training programs for local fire departments, conducting fire investigations as requested, offering public fire education, maintenance of fire service training records and qualifications, and the compilation of Wyoming fire statistics and reports.

In 1976, a study was conducted by the Community Services Division of the University of Wyoming (Wyoming Department of Fire Prevention and Electrical Safety, 2010). William E. Smiley conducted this study and produced a report titled, A Statewide Organizational Design for Fire Education and Training for Wyoming (Smiley, 1976). As a result of this report, the WDFPES Training Division was created as part of the State Fire Marshal’s Office. In 1979, the first, full-time, fire service instructor for the agency was hired (Wyoming Department of Fire Prevention and Electrical Safety, 2010). Over the next 30 years, the responsibilities and services
offered by the Training Division continued to grow to meet the needs of the Wyoming fire service.

In 2005, the Wyoming Legislature allocated funding to the WDFPES to conduct a comprehensive study of fire related training within the state (Wyoming Department of Fire Prevention and Electrical Safety, 2010). Firescope Mid-America, a consulting firm from Greeley, Colorado was contracted to conduct the study and produce the final report titled, A Study of Fire Service Training in Wyoming (Firescope Mid-America, 2005). As a result from the recommendations contained in this study, the WDFPES Training Division took a much more active role in conducting fire service training, rather than simply facilitating training throughout the state. In 2004, the Training Division provided instruction for a total of 816 students (Wyoming Department of Fire Prevention and Electrical Safety, 2010). By contrast, in 2010, the Training Division provided instruction for a total of 8,596 students (P. J. Oakes, personal communication, February 10, 2010). This dramatic example illustrates the exponential growth of training programs offered within this six year period. Despite this tremendous growth, the Training Division has not expanded efforts to evaluate the effectiveness of the training programs offered.

The Training Division currently uses end-of-course reaction sheets, or happy sheets as they are commonly referred to in the field, to gauge the immediate reactions of participants after each training session offered. While these reaction sheets may have been sufficient evaluative tools prior to 2005, the reaction sheets are inadequate to comprehensively evaluate the current training programs administered by the WDFPES. As a result, the Training Division struggles to monitor students’ use of new knowledge and skills, student learning outcomes, long-term performance trends, and the cost effectiveness of training programs offered.
Students in the Executive Fire Officer Program (EFOP) are required to choose topics that are linked to the specific content of the relevant EFOP course and also support at least one of the operational objectives of the U.S. Fire Administration (U.S. Fire Administration, National Fire Academy, 2011). The topic of this applied research paper is directly related to the NFA Executive Development course and two of the USFA operational objectives: (1) improve the fire and emergency services’ professional status, and (2) improve the fire and emergency services’ capability for response to and recovery from all hazards (U.S. Fire Administration, National Fire Academy, 2011).

**Literature Review**

A literature review was conducted to understand previously published works and to further build upon existing knowledge related to the topic of this applied research paper. During the literature review, numerous sources of information were discovered relating to the evaluation of instructional effectiveness as a general topic of discussion. These sources of information were narrowed in scope to focus strictly on the research questions of this study.

The literature review for the first research question, regarding the training evaluation process used by non-fire related organizations, focused on seminal publications. Several premier published works related to the evaluation of instructional effectiveness were chosen for their direct relevance and their applicability of the applied research paper. Other broad sources of information were considered and discounted due to lack of relevance, recency, or lack of acceptance among industry professionals.

The Handbook of Practical Program Evaluation, 3rd Edition, is a textbook commonly used by colleges and universities for program management and public administration graduate level courses. This comprehensive textbook includes chapters individually written by experts in
the field of program evaluation and was edited as a whole by Joseph S. Wholey, Harry P. Hatry, and Kathryn E. Newcomer (Wholey, Hatry, & Newcomer, 2010). Relevant chapters from this textbook were included in the literature review to provide insight regarding how non-fire related organizations evaluate training programs.

In chapter three of the Handbook of Practical Program Evaluation, McLaughlin and Jordan (2010) suggest the use of logic models to provide guidance and direction as part of a comprehensive program evaluation. A logic model can help to refine the focus of a program by identifying what evaluation questions should be asked and by identifying the measurements of performance. A logic model can be used to identify how a program will work under specified conditions to solve identified problems. A logic model should be displayed as a graphic representation of the resources, activities, and outputs and how they interrelate to each other (McLaughlin & Jordan, 2010).

McLaughlin and Jordan (2010) explain a logic model can help a program manager understand assumptions about a program by explicitly defining the program. When a logic model is created, the assumed causal relationship between the steps of the model should be verified for accuracy. Identifying assumptions and verifying their accuracy can assist to minimize future conflict and ensure accurate evaluation results. Once the program is clearly understood the logic model can be used as an evaluation tool to help identify if the program accomplishes what it was meant to (McLaughlin & Jordan, 2010).

In chapter five of the Handbook of Practical Program Evaluation, Poister (2010) explains a comprehensive performance measurement system is necessary to successfully conduct program evaluation. Many state and federal government organizations utilize data from performance measurement systems to identify evidence of deteriorating program performance. A
A comprehensive performance measurement system should include six clearly defined measurement criteria: (1) outcomes, (2) cost effectiveness, (3) outputs, (4) efficiency, (5) service quality, and (6) customer satisfaction (Poister, 2010). It is important to understand the distinction between outcomes and outputs when developing a performance measurement system. Outcomes indicate the results the program was intended to produce. In contrast to outcomes, outputs indicate total work performed or elements of service produced (Poister, 2010). Outputs are critical performance measurement considerations that must be understood as part of the whole system. An example of an output could include classes offered or student contact hours taught. In general terms, outputs are the product produced by the organization that eventually leads to the desired outcomes.

In chapter eleven of the Handbook of Practical Program Evaluation, Hatry (2010) explains that evaluation of agency records is a vital component of a program evaluation. Regularly collected agency records maintained by an organization can be extremely beneficial as part of an evaluation system. Hatry (2010) explains the primary advantage of agency records is that the data is already available, which eliminates the requirement to conduct extensive data collection efforts. Unfortunately, much of the information necessary to conduct an evaluation may be missing or incomplete. Additionally, the data may be inaccurate, overly aggregated, or even confidential. When faced with such potential problems, the evaluator must attempt to identify, isolate and mitigate each difficulty to ensure accurate analysis. With careful consideration, any difficulties encountered can be overcome in a manner that does not compromise the quality of the evaluation (Hatry, 2010).
The literature review of the Handbook of Practical Program Evaluation provided a broad perspective related to the evaluation of a general program as a whole. The information was applicable on many levels and helped to identify far-reaching implications of evaluation as a systemic analysis of program management.

Continuing the literature review for the first research question regarding non-fire related organizations, a second reference source was reviewed for applicable information. Evaluating Professional Development by Dr. Thomas R. Guskey was selected to further narrow the scope of the literature review from the evaluation of programs in general, to the evaluation of training programs. Guskey introduces his work by explaining the primary purpose of the text is to offer educators practical guidance to asking good questions and gathering valid information regarding what contributes to effective professional development (Guskey, 2000).

As an introduction, Guskey (2000) stresses the importance of evaluation by illustrating recent increased demands for government accountability, which has lead to an increased pressure for evaluation of training programs. Educators can no longer “continue to do things just because we’ve always done things that way” (Guskey, 2000, pp. 7-8). Educators must be prepared to provide positive proof that their work has been productive, valuable, and beneficial. To accomplish this goal, Guskey (2000) contends professional evaluation should as answer the following questions:

1. Is the program creating the intended results?
2. Is the program improving what has been done in the past?
3. Is the program better than other competing programs?
4. Is the professional evaluation worth the expenditures?
Guskey (2000) explains evaluations are often inadequate or ineffective for three main reasons. The first reason is that many evaluations are often merely a documentation of training that has occurred rather than a true evaluation of that training. The second reason is that many evaluations are simply too shallow. These evaluations do not provide enough depth to consider perceptions, attitudes, beliefs, or indicators of success such as knowledge or practice. The third reason is that many evaluations are too brief. If the evaluation is meant to measure long-term results, the evaluation must be extended over longer time periods (Guskey, 2000).

Guskey (2000) further explains professional development often is not adequately evaluated because it can be difficult to do so. A partial reason for this difficulty is because researchers simply have not agreed as to what the most appropriate criteria to evaluate effectiveness should be. For example, evaluation of professional development frequently focuses on issues of quantity rather than the importance of quality. This may be because measuring quality requires the establishment of specific criteria to determine if a strategy was used appropriately.

To help define the evaluation criteria, Guskey (2000) provides the following definition of evaluation, “Evaluation is the systematic investigation of merit or worth” (Guskey, 2000, p. 41). Systematic in this context implies a “thoughtful, intentional and purposeful process” (p.41). Investigation refers to the “collection and analysis of appropriate and pertinent information” (p.42). Finally, Guskey explains that “merit or worth implies appraisal and judgment” (Guskey, 2000, p. 42). It is important to clearly define what will be evaluated, what criteria the evaluation will be based upon, and what the program has achieved.

The Guskey model for professional development evaluation is a comprehensive analysis process used to thoroughly evaluate professional development. The Guskey model
systematically measures five critical levels of evaluation: (1) participants’ reactions, (2) participants’ learning, (3) organization support and change, (4) participants’ use of new knowledge and skills, and (5) student learning outcomes (Guskey, 2000). The analysis of each level of evaluation builds upon the evaluation of the previous levels to create a comprehensive examination of the training program as well as the results associated with it. Each level of evaluation requires extensive planning and preparation to elicit accurate results.

The evaluation of participants’ reactions level measures how the participants regard their professional development experience. These evaluation questions can be classified into three broad categories: content questions, process questions, and context questions (Guskey, 2000). Content questions relate to the relevance and use of the material covered during the training. Process questions relate to how the training was delivered. Context questions generally relate to the comfort of the training environment (Guskey, 2000). The evaluations of the participants’ reactions are often measured through the use of end-of-course evaluation sheets.

The evaluation of the participants’ learning level measures the changes generated in participants’ knowledge, skill level, and/or attitudes or beliefs (Guskey, 2000). This examination validates the relationship between what was intended and what was achieved. The evaluation should measure all three domains of learning: cognitive, psychomotor, and affective. However, an evaluation of the affective domain cannot take place at the same time as the measurements of the cognitive and psychomotor domains. Instead, the affective domain must be evaluated at a later date, after the student has had an opportunity to contemplate the training material (Guskey, 2000).

The evaluation of the organizational support and change level is essential in any professional development evaluation. Organizational culture could potentially prevent the
success of improvement efforts. Evaluation of organizational support should assess conditions that encourage successful professional development as well as the potential detriments that may hinder improvement (Guskey, 2000).

The evaluation of participants’ use of new knowledge and skills level is a measurement of the link between the training program and the actual practices. Evaluation of participants’ use of new knowledge and skills cannot be measured at the completion of the professional development session (Guskey, 2000). Instead, this measurement must be made after the participants have had time to adapt what they have learned and apply it in their particular setting. Direct observations of the participants after completion of the professional development can provide simple and immediate evidence of the participants’ use of their new knowledge and skills. Supervisor interviews can be a highly effective means of collecting this information. Supervisors often have the best opportunities to regularly observe the participants performing the learned behaviors (Guskey, 2000).

The evaluation of the student learning outcomes level focuses on the end result of improving student learning. The evaluation of learning outcomes allows instructors to focus on student learning rather than the methods of instruction. The evaluation of student learning outcomes is valuable in measuring the effectiveness of the instructor’s professional development in relation to how that professional development corresponds to the direct impact on the student (Guskey, 2000).

The literature review of Evaluating Professional Development provided an extremely in-depth perspective regarding the development of a comprehensive evaluation system. The information was very valuable and it provided clear guidance related to how non-fire related organizations can evaluate the effectiveness of training programs.
To complete the literature review regarding forms of evaluation used by non-fire related organizations, a third and final reference source was reviewed. Evaluating Training Programs by Donald L. Kirkpatrick and James D. Kirkpatrick was selected to be included in the literature review because the work is considered the preeminent publication in the field of training program evaluation. Many publications are based on the primary research conducted by Dr. Donald L. Kirkpatrick.

In 1959 Dr. Donald L. Kirkpatrick published a series of articles where he introduced the four levels of evaluation used for evaluating training programs (Kirkpatrick & Kirkpatrick, 2006). The Kirkpatrick evaluation model consists of four sequential levels of evaluation: (1) reaction, (2) learning, (3) behavior, and (4) results (Kirkpatrick & Kirkpatrick, 2006). An effective evaluation program should include all four levels of evaluation to elicit a change in behavior and improve student results.

Kirkpatrick & Kirkpatrick (2006) explain evaluation at the reaction level simply measures how participants react to the training program. It can be thought of as a measurement of customer satisfaction. Evaluation of the reaction level is important because if a training program does not get a positive reaction from participants, those participants will not be motivated to learn. Kirkpatrick & Kirkpatrick suggest that, “positive reaction may not ensure learning, but negative reaction almost certainly reduces the possibility of its occurring” (Kirkpatrick & Kirkpatrick, 2006, p. 22). Evaluation at the reaction level is extremely important, but often it is not sufficient to adequately evaluate a training program. Additional evaluation at the learning, behavior, and results levels is also necessary to thoroughly evaluate a training program.
Kirkpatrick and Kirkpatrick (2006) explain end-of-course reaction sheets are frequently distributed at the completion of training sessions to evaluate the reaction level of the participants. However, these reaction sheets are inadequate as a sole evaluative instrument. Kirkpatrick and Kirkpatrick (2006) explain many instructors and training directors solely use reaction sheets because they don’t consider evaluation important enough to warrant additional effort. Additionally, they may not know how to develop a more comprehensive evaluation program. Furthermore, pressure from higher management to do more than simple reaction sheets may not exist. The instructors and training directors may feel secure in their current job and see no need to do more. Finally, they may have too many other things that are more important or that they prefer to do instead of evaluation (Kirkpatrick & Kirkpatrick, 2006).

Kirkpatrick & Kirkpatrick (2006) explain when using reaction sheets, it is important to remember participants will often be anxious to leave after the training program has concluded. Many participants will not take the time necessary to write out their comments and thoroughly complete the reaction sheet in a useful manner. Instructors should therefore include the completion of the reaction sheets as part of the program. For example, the instructor could explain to the students a final announcement will be made to the class after the reaction sheets have been completed and collected (Kirkpatrick & Kirkpatrick, 2006). This tactic will ensure the students remain focused and thoroughly complete the reaction sheets instead of hurrying through in an effort to leave.

Kirkpatrick and Kirkpatrick (2006) explain that when using reaction sheets, it is important to tabulate the numerical results and then measure the reactions against an established standard of performance. If the standard of performance is not met, a change may be necessary. Changes in the instructor, facilities, subject matter, audiovisual aids, or other suggestions
provided from the reaction sheets may help improve the reaction ratings and meet the standard of performance. To this end, it may be helpful to summarize the comments on the reaction sheets and give them careful consideration (Kirkpatrick & Kirkpatrick, 2006).

Kirkpatrick and Kirkpatrick provide the following definition for evaluation at the learning level, “learning can be defined as the extent to which participants change attitudes, improve knowledge, and/or increase skill as a result of attending the program” (Kirkpatrick & Kirkpatrick, 2006, p. 22). If a participant’s attitude has been changed, his or her knowledge has increased, or the participant’s skill level has improved, then learning has occurred. To evaluate the learning level, the specific objectives of the training must be determined and evaluated regarding the attitudes, knowledge, and skills of the participants.

To evaluate the learning level, Kirkpatrick and Kirkpatrick (2006) suggest using a pretest and posttest as a method to measure increased knowledge. Comparing the results from the pretest and posttest can be an important aspect of evaluating the learning level. Kirkpatrick and Kirkpatrick (2006) further explain that a performance test is necessary to measure increase in skills. When conducting a performance test, it is important to use a trained evaluator to compare the participant’s level of proficiency against an established standard of performance. Changes in attitude can be measured with traditional survey instruments. An attitude survey can measure the participant’s attitude before the training program and compare it to the desired attitudes after the training program. Participants should anonymously complete the attitude survey to ensure honest answers (Kirkpatrick & Kirkpatrick, 2006).

Kirkpatrick and Kirkpatrick provide the following definition for evaluation at the behavior level, “behavior can be defined as the extent to which change in behavior has occurred because the participants attended the training program” (Kirkpatrick & Kirkpatrick, 2006, p. 22).
It is exceptionally important to evaluate the previous two levels of evaluation, reaction and learning, before evaluating the third level, behavior. If the reaction and learning levels were inadequate, the student’s behavior is not likely to change. However, other factors may affect changes in behavior as well. The participant must want to change the behavior, understand how to change, work in a climate that encourages the change, and be rewarded for changing their behavior (Kirkpatrick & Kirkpatrick, 2006). There will be very little opportunity for a change in behavior to occur if the work environment prevents or discourages the change in behavior.

Kirkpatrick and Kirkpatrick (2006) explain it is also important to allow sufficient time to elapse after the training program to allow participants the opportunity to use the new behavior. Anywhere from two to six months after the training has occurred is a realistic time frame. It may be necessary to interview someone who has observed the behavior change in the participant. For example, the participant’s supervisor, subordinate, and/or the actual participant could be interviewed (Kirkpatrick & Kirkpatrick, 2006).

Kirkpatrick and Kirkpatrick provide the following definition for evaluation at the results level, “results can be defined as the final results that occurred because the participants attended the program” (Kirkpatrick & Kirkpatrick, 2006, p. 25). To measure the results level, it is important to state the final objectives of the training program in terms of the desired results. For example, the objective of a training program may be to reduce the frequency and/or severity of accidents in the workplace. The results therefore should be measured in accordance to this objective (Kirkpatrick & Kirkpatrick, 2006).

Kirkpatrick and Kirkpatrick explain that measuring the results level after a training program should indicate tangible results that justify the cost of the training program as it relates to the benefits provided. The budget of a training program should therefore be justified.
Furthermore, some training programs can be easily evaluated for results by simply tracking relevant statistics for improving trends. However, more abstract training programs such as leadership or communication skills may be much more difficult to evaluate the results effectively (Kirkpatrick & Kirkpatrick, 2006).

The Evaluating Training Programs text was directly applicable to the research question and proved to be extremely valuable as part of the literature review. The text provided specific examples that illustrated how non-fire related organizations evaluate training programs.

The second, third, and fourth research questions were not included in the literature review because all three questions required specific information from non-published information sources. The procedures section details specifically how these research questions were addressed as part of the applied research process.

**Procedures**

The intended purpose of this applied research project was to identify methods to evaluate the effectiveness of fire training programs administered by the WDPES Training Division. In an effort to address this purpose, four separate and distinct research questions were chosen. The research procedures were selected to ensure each of the research questions were thoroughly analyzed and also to ensure reliable and accurate conclusions could be made regarding the questions.

The first research question related to the methods of evaluation used by non-fire related organizations to evaluate effectiveness of training programs. To address this research question, an extensive literature review was conducted as previously described. In addition to the literature review, representative organizations were selected from government and industrial occupations to be interviewed regarding the evaluation methods used by each organization. The
representative organizations were chosen to characterize exemplar methodologies that might be employed by other similar organizations. A telephone interview was conducted with both of the selected organizations to ensure the information obtained would be thorough, accurate, and timely.

The Wyoming Occupational Safety and Health Administration (WOSHA) was selected as a representative organization of the government because WOSHA is frequently required to evaluate the training programs of various employers, both public and private, throughout the state of Wyoming. WOSHA was specifically selected to be interviewed because of the direct relevance of the jurisdictional boundaries and the similarities with the WDFPES.

On April 21, 2011 at 12:30 PM, a telephone interview was conducted with Daniel Bulkley, Occupational Health & Safety Consultant for the Wyoming Occupational Safety and Health Administration (see Appendix A). Mr. Bulkley was selected to be interviewed because of his organizational responsibility as the Health & Safety Consultant. In this capacity, Mr. Bulkley regularly evaluates the training programs of industrial occupational organizations within the State of Wyoming. The intent of the open-ended interview was to discern how WOSHA evaluates the training programs of both internal employees and external organizations. During the interview, Mr. Bulkley answered questions regarding the roles and responsibilities of the WOSHA, how WOSHA evaluates the training programs of fire departments, how WOSHA evaluates internal training programs, and what positive or negative impacts have resulted from evaluations completed by WOSHA.

On July 01, 2011 at 3:00 PM, a telephone interview was conducted with John Watterson, a private industrial safety consultant for numerous industrial businesses throughout Wyoming (see Appendix B). Mr. Watterson teaches several construction safety courses, collateral duty
courses, and Wyoming oil and gas safety standards courses. Mr. Watterson was selected to be interviewed because of his organizational responsibility as a private industrial safety consultant and instructor. The intent of the open-ended interview was to determine how industrial occupations evaluate training programs. During the interview, Mr. Watterson answered questions regarding the evaluation of industrial training programs, end-of-course evaluation sheets, evaluation costs, and benefits of evaluation.

The second research question related to the methods of evaluation employed by the National Fire Academy (NFA) to evaluate effectiveness of NFA offered fire training programs. To address this research question, a meeting was conducted with John H. Newman, Program Director for Synthesis Professional Services, Inc. on January 13, 2011 at the NFA campus. Dr. Newman was selected for the interview because of his responsibilities as an NFA contract service provider to supervise evaluation programs and services. During the initial meeting, Dr. Newman was asked to explain the evaluation program administered by the NFA. In an effort to sufficiently explain the evaluation programs the NFA utilizes, Dr. Newman provided several internal documents and evaluation instruments utilized by the NFA. The NFA internal documents were provided after a request was submitted to the NFA Contract Officer’s Technical Representative (COTR). Once the request was approved, Dr. Newman provided copies of the National Fire Academy Long-Term Evaluation Forms for Students (see Appendix C), the National Fire Academy Long-Term Evaluation Forms for Supervisors (see Appendix D), the National Fire Academy Training Evaluation Center Procedure Manual, and the 2010 NFA annual long-term evaluation report (see Appendix E). Each of the documents was thoroughly examined to determine how the NFA evaluates effectiveness of fire training programs.
On July 05, 2011 at 2:30 PM, a follow-up telephone interview was conducted with Dr. Newman, (see Appendix F). The intent of the open-ended interview was to clarify information regarding the internal NFA documents previously discussed. During the interview, Dr. Newman answered questions regarding the effectiveness of NFA evaluation instruments, the distribution of the evaluation instruments, the differences between the end-of-course evaluations and the long-term evaluations, how the results from the evaluation instruments are gathered and interpreted, the budgetary justifications related to NFA evaluations, and the impacts the evaluations may have had on fire service training programs.

The third research question related to the methods of evaluation used by other state fire training agencies to measure the effectiveness of their fire training programs. To address this research question, a questionnaire was created and mailed to state fire training agencies with similar characteristics to the WDFPES. The questionnaire was designed as an open-ended questionnaire, which allowed individuals to thoroughly answer each question. The questionnaire was not designed to be statistically valid as a survey instrument. Rather, the intent of the questionnaire was to collect relevant information from other similar state fire training agencies regarding the evaluation methodology used by each agency.

The selected state fire training agencies were chosen because each agency was similar to the WDFPES in state governmental authority, geographic size, and because they each provide fire training for primarily rural fire service organizations with large travel distances between the different fire service organizations. As such, the questionnaires were mailed to the State Fire Training Directors for each of the following organizations:

- Alaska State Division of Fire & Life Safety Training and Education
- Nebraska State Fire Marshal's Office Training Division
The fourth research question concerning to the methods of evaluation used by the WDFPES Training Division was addressed by conducting a formal interview with the Wyoming State Fire Training Director, Phillip J. Oakes. Mr. Oakes was selected to be interviewed because of his official responsibility as the WDFPES Training Division Manager. Acting within this authority, Mr. Oakes is the primary individual responsible for the evaluation of the training programs offered by the WDFPES. The interview was conducted on March 03, 2011, 8:03 PM at the Casper Ramkota Inn. The interview was recorded using an audio recording device and transcribed for future reference (see Appendix G). Mr. Oakes answered several questions regarding how the WDFPES collects data for offered training, monitors the results from that training, evaluates the training programs, and justifies the budget expenses to continue training programs.

Each of the procedures used to address the four research questions included specific limitations. These limitations may have affected the results of the study. Every attempt was made to overcome these limitations and ensure accurate, reliable, and valid results. Future research regarding this topic may require alternative methods to avoid similar limitations.

During the research process, it was assumed that all respondents to the questionnaires and interviews provided truthful answers. If larger sample sizes were used during the research, untruthful answers may have created less of an impact on the results from the study.
Only two representative organizations were chosen to characterize exemplar methodologies employed by non-fire related organizations. A larger sample size may have yielded more accurate and reliable results depicting the organizations who participated in the study. The number of representative organizations was kept low in an effort to narrow the field of research and focus on similar organizations to the WDFPES. To overcome this limitation, a thorough literature review was conducted regarding the research question.

The National Fire Academy Training Evaluation Center Procedure Manual was the only reference source used to review the NFA evaluation procedures. Additional reference sources may have provided a more detailed explanation of the NFA evaluation procedures. An extensive search for additional reference material was unsuccessful. To overcome this limitation, two separate interviews were conducted with the NFA evaluation program contract service provider.

The sample size of state fire training agencies who received the questionnaire was limited to seven agencies. The small sample size prevented a detailed statistical analysis of the data obtained. The number of representative organizations was kept small to limit the scope of research. In addition to the questionnaire small sample size limitation, many of the state fire training respondents did not return the questionnaires before the requested completion date. To overcome this limitation, follow-up phone interviews were conducted with the remaining agencies to complete the necessary questionnaires for the study. The format of the follow-up phone interviews compared to the emailed responses may have produced unanticipated discrepancies in the results.

Results

The first research question regarding the evaluation methods used by non-fire related organizations required the completion an extensive literature review. The literature review was
Evaluating the effectiveness of fire training is effective in assessing methods of evaluation used by non-fire organizations because the reference sources provided detailed explanation of various evaluation methodologies. The reference sources also provided numerous case studies of organizations who have implemented assorted evaluation techniques. Many of the case studies cited in both Evaluating Professional Development and Evaluating Training Programs provide excellent examples of organizations who have successfully developed extensive, comprehensive evaluation programs (Guskey, 2000; see also Kirkpatrick & Kirkpatrick, 2006). The literature review indicated there is a tremendous amount of excellent information available to create or improve evaluation programs if an organization so desires. Specific information regarding the findings from the literature review has already been discussed in the literature review section of this paper.

In an effort to substantiate the information discovered during the literature review for the first research question, additional research was necessary to assess methods of evaluation used by non-fire related organizations. As such, phone interviews were conducted with representative examples of non-fire related organizations. Daniel Bulkley from WOSHA and John Watterson, an industrial private safety consultant, were selected and interviewed for this purpose. The phone interviews conducted with Mr. Bulkley and Mr. Watterson indicated both organizations only evaluate immediate student reactions at the completion of the course (D. Bulkley, personal communication, April 21, 2011; J. Watterson, personal communication, July 01, 2011). Both Mr. Bulkley and Mr. Watterson indicated they evaluated their training programs to ensure regulatory compliance as well. They also indicated the training programs are informally evaluated in an effort to improve workplace safety. However, no established procedures were in place to monitor the causal link between workplace training and workplace safety. In all, the
information obtained from the interviews corroborated the information discovered as part of the literature review.

The second research question regarding the evaluation methods used by the NFA was completed by examining the internal National Fire Academy Training Evaluation Center Procedure Manual provided by Dr. John H. Newman, Program Director for Synthesis Professional Services, Inc. In 1994, the National Fire Academy (NFA) developed a comprehensive evaluation program to measure student satisfaction levels upon course completion (U.S. Fire Administration, National Fire Academy, 2010). As part of this evaluation program the NFA Training Evaluation Center (Evaluation Center) was created in 1995. The Evaluation Center is responsible for soliciting the opinions of NFA students regarding their educational experience and the outcomes of the training received. As such, the Evaluation Center develops and administers student end-of-course evaluations for resident course offerings. The end-of-course evaluations are designed to collect information regarding the student’s background information and the student’s ratings regarding course satisfaction, course content, instructor performance, NFA facilities, and the overall training experience (U.S. Fire Administration, National Fire Academy, 2010).

In 1996, the NFA began to conduct long-term evaluations to assess student behavior changes, measure student job performance improvements, and track long-term results associated with course completion (U.S. Fire Administration, National Fire Academy, 2010). The NFA Evaluation Center distributes long-term evaluation questionnaire forms to both students and their supervisors approximately 4-6 months after course completion. The long-term evaluations collect information regarding student background information, job performance, behavioral changes, community risk reduction efficacy, and the costs vs. benefits for course attendance. An
The annual long-term evaluation report is compiled summarizing data regarding “the impact of training on job performance, comparisons of NFA and other training opportunities, the diffusion of training into the home department, and the suggestions for improvement for future course offerings” (U.S. Fire Administration, National Fire Academy, 2010, p. 7).

In 2006, the NFA began using web-based evaluations to replace the traditional pen-and-paper questionnaires (U.S. Fire Administration, National Fire Academy, 2010). The student end-of-course evaluations, the long-term evaluation form for students, and the long-term evaluation form for supervisors are now completed using this web-based format. The web-based evaluation system allows all resident students at the NFA to participate in the long-term evaluations (U.S. Fire Administration, National Fire Academy, 2010).

A follow-up interview with Dr. John H. Newman was conducted to clarify information from the National Fire Academy Training Evaluation Center Procedure Manual. Dr. Newman explained that both the end-of-course evaluations and the long-term evaluation instruments are administered using web-based computer software applications (J. H. Newman, personal communication, July 05, 2011). The software program collects and compiles the aggregate information into an information database. The results from the information database can then be extrapolated to evaluate curriculum, identify any training problems, monitor instructor performance, monitor participant behavior changes, and to monitor the outputs and outcomes from the training (U.S. Fire Administration, National Fire Academy, 2010). The outcomes from the training are compiled into an annual report that is published and utilized to substantiate continued budgetary expenses for the training program (J. H. Newman, personal communication, July 05, 2011).
The third research question was addressed by mailing a questionnaire to state fire training agencies similar to the WDFPES. The questionnaire was distributed to seven different State Fire Training Directors. Of the seven State Fire Training Directors who received the questionnaire, only the Alaska State Division of Fire & Life Safety Training & Education and the State of Oregon Department of Public Safety Standards & Training completed and returned the questionnaire before the stated deadline. To ensure more accurate and reliable results, a follow-up phone interview was conducted with the remaining five recipients of the questionnaire. The recipients provided the necessary information during the phone interview to complete the questionnaire. The responses from the phone interviews were recorded on the original questionnaires and the end-of-course evaluations from each state were collected for review (see Appendix H). The similarity between each of the state’s end-of-course evaluations was remarkable.

The results from the state fire training organization questionnaires indicated six of the seven states currently utilize similar generic evaluation forms to those used by the WDFPES. The state fire training evaluation forms are generally completed by each student and are collected after the culmination of each fire training program. The results from these evaluation forms are reviewed by training division administrative staff to identify any problems or issues and correct any deficiencies. Based upon the student feedback from the end-of-course evaluation forms, all of the state training agencies have improved their training programs.

The Nebraska State Fire Marshal’s Office Training Division was the only state fire training agency who did not utilize a generic end-of-course evaluation form at the culmination of offered fire training programs. In approximately 2007, the Governor of Nebraska implemented a significant budget reduction effort. As such, many advisory boards and committees for the State
of Nebraska were discontinued. The Nebraska State Fire Marshal's Office Evaluation Committee was dissolved as part of this effort. Before the Evaluation Committee was dissolved, the committee was responsible to collect and review evaluation feedback from the training programs offered by the Nebraska State Fire Marshal's Office. Since the dissolution of the Evaluation Committee, the Nebraska State Fire Marshal's Office relies on informal feedback from the Nebraska Volunteer Firefighters Association, the Nebraska Fire Service Instructors Association, the Nebraska Arson Instructors Association, as well as the informal feedback of the Nebraska State Fire Marshal's Office training staff to evaluate current training programs.

The fourth research question regarding WDFPES Training Division’s evaluation methods was addressed by conducting an interview with the Wyoming State Fire Training Director, Phillip Oakes. The results from this interview indicate the WDFPES provides end-of-course reaction sheets to monitor the immediate satisfaction level of the students and to identify any problems with the training experience (P. J. Oakes, personal communication, March 03, 2011). The end-of-course evaluations are submitted to the Training Director who then reviews them. The information is not formally tallied, tracked, or monitored for trends. Rather, Mr. Oakes reviews the evaluations as they arrive to identify any problems that may need further clarification or follow-up actions.

Mr. Oakes also explained the WDFPES relies on proctored written exams and practical skills evaluations to identify deficiencies in training programs (P. J. Oakes, personal communication, March 03, 2011). If students consistently perform poorly on the exams and practical skill evaluations, the Training Director can attempt to make appropriate changes in the curriculum, delivery method, or instructor to resolve the problem. He also explained the
identification of the problem that led to the poor performance can be problematic. Therefore, the resolution method may be difficult to implement and monitor for improvement.

Mr. Oakes further explained the WDFPES does not evaluate the outputs or outcomes from the training programs offered (P. J. Oakes, personal communication, March 03, 2011). A direct correlational link between the training offered and any improvements in student’s job performance does not currently exist. The ultimate results regarding property loss, civilian fire injuries and fatalities, and firefighter injuries and fatalities are monitored each year for statistical changes. However, a causal link between the WDFPES training and the statistical analysis of these results does not exist.

**Discussion**

As was discovered during the literature review and corroborated during research, many organizations only evaluate their training programs in regards to the immediate reaction level of the participants and the measurable learning of the students in terms of written exams and practical skills evaluations. Few organizations continue evaluation efforts to assess any changes in student behavior or the final results achieved due to the training program. This distinction is important because the evaluation of the reaction and learning levels are only minimally effective without evaluating the behavior and results levels from the training.

Kirkpatrick and Kirkpatrick (2006) suggest training should be evaluated in an effort to demonstrate how the training contributes to the organization’s objectives and goals, to justify the existence and budget of the training department, to decide whether to continue or discontinue training programs, and to gather information on how to improve future training programs. If an organization chooses to only evaluate the reaction level of the students at the completion of the
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training, the organization cannot justify the necessary training expenses, or justify the continued existence of the training program.

It is vitally important to meet the increased demand for accountability by thoroughly evaluating not just the student’s reaction and learning levels, but also the student’s behavior changes and the long-term results from training program. Guskey (2000) accurately explained that instructors must be prepared to demonstrate the training is valuable, worthwhile, and productive. Without this evaluation effort on the part of the instructor, the continuation of a training program simply cannot be justified for a long term program.

Guskey (2000) has created the following list of guidelines to improve the quality of professional development evaluations:

1. Clarify the intended goals of the program.
2. Appraise the value of the intended goals.
3. Analyze the context of the program.
4. Calculate the program’s potential to meet the intended goals.
5. Determine how the goals can be observed, measured, and assessed.
6. Determine strategies to gathering evidence of progress.
7. Gather and analyze evidence of participants’ reactions as part of the program.
8. Gather and analyze evidence of participants’ learning as a result from the program.
9. Gather and analyze evidence of organizational support regarding the program.
10. Gather and analyze evidence of participants’ use of new knowledge and skills after attending the program.
11. Gather and analyze evidence of student learning outcomes related to the program.
12. Prepare evaluation reports to key stakeholders.
These guidelines are designed to be used by an organization to develop a comprehensive evaluation system for a training program. The systematic processes are intended to ensure the successful creation of a professional development evaluation program. The guidelines build upon the foundation of the Kirkpatrick evaluation model to specify ancillary processes that should be performed to ensure successful program evaluation.

When reviewing the above list of guidelines, it is important to recognize that step nine suggests the evaluator should gather and analyze evidence of organization support. It may become evident that sufficient organizational support does not exist to thoroughly evaluate a training program at the behavior and result levels. It must be noted the financial costs, calendar time costs, and management time costs to an organization can be expected to increase proportionally as the level of evaluation precision, reliability and relevance increases (Whooley, Hatry, & Newcomer, 2010). For this reason, a cost/benefit analysis of the comprehensive evaluation system should be fully explored before the program is initiated. Without the full support of the organization, the value of the evaluation system may be diminished.

The NFA Evaluation Center administers both end-of-course evaluation and long-term evaluation instruments. The NFA end-of-course evaluations are used to evaluate Kirkpatrick’s reaction level. Kirkpatrick’s learning level of evaluation is accomplished through the use of pre-course exams and post-course exams after the completion of NFA offered courses. The NFA long-term evaluations are used to evaluate Kirkpatrick’s behavior level. As an example, questions regarding participants’ use of new knowledge and skills, improvements in job performance, and increased organizational responsibility are designed to evaluate changes in the students’ behaviors as a result from the students’ training. The long-term evaluations can also be used to measure Kirkpatrick’s results level of evaluation. For example, questions regarding
efforts to address fire-related problems in the participants’ high risk areas of their communities and questions regarding reductions in overall fire-related risks in the participants’ communities could be used to monitor the long-term results from the training. A more comprehensive evaluation of the results level would require statistical analysis of the participants’ communities. The NFA Evaluation Center has created an effective, valid, and reliable evaluation system that encompasses all four levels of the Kirkpatrick evaluation model. The processes used by the NFA Evaluation Center could be adapted by other organizations to develop a similar evaluation system.

The results from this study indicate the WDFPES Training Division currently only evaluates the immediate reaction level of the students and the measurable learning of the students who participate in WDFPES offered training. However, the WDFPES Training Division does not evaluate the behavioral changes or outcomes that result from the offered training programs. While this level of evaluation is congruent with other similar organization’s evaluation efforts, a mediocre evaluation system will not improve the fire training programs offered by the WDFPES. Maintaining a status quo will only continue to produce the same results in the future that have already been produced in the past.

The development of a comprehensive evaluation system, that is designed to evaluate the effectiveness of fire training programs, will ensure student learning outcomes occur as intended. Future delivery of fire training opportunities within the state should be evaluated not only for the students’ reactions and immediate learning, but also the student’s use of the new knowledge and skills as well as the long-term outcomes that occur because of the training.
Recommendations

As a result from the research conducted for this applied research paper, it is recommended the WDFPES Training Division develop a comprehensive, systematic, and thorough evaluation system for all fire training programs offered. A comprehensive evaluation system would allow the WDFPES Training Division to improve the current level of evaluation, monitor long-term student behavioral changes, evaluate outcomes resulting from the training, and provide financial accountability for the Training Division’s budget expenditures.

The comprehensive evaluation system should be developed using information available from the Kirkpatrick evaluation model, the Guskey evaluation model, the National Fire Academy, and other state fire training agencies. The comprehensive evaluation system should include: (a) explicit long-term goals, (b) systematic procedures to accomplish the intended goals, (c) clearly defined criteria to evaluate the effectiveness of activities performed, and (d) a data management system to collect aggregate information and produce reports that demonstrate progress toward the defined goals.

The long-term goals of the WDFPES training program should be carefully considered and explicitly defined as part of the comprehensive evaluation system. The long-term goals should be developed by clearly identifying the intended outcomes and mission of the organization. The goals should be written in a specific and measurable format that can be easily monitored in regards to progress and accomplishment.

The activities of the Training Division should be aligned with the defined goals and the intended outcomes in an effort to identify the systematic procedures and actions necessary for success. The development of a logic model (see Table 1) can accomplish this task by refining the focus of the training program. A logic model will help to identify what evaluation questions
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should be asked and to identify the necessary measurements of performance (McLaughlin & Jordan, 2010). A thorough and assiduous logic model will be essential to the development of a comprehensive evaluation system for the WDFPES.

The criteria used to evaluate the effectiveness of training activities performed by the WDFPES should be clearly established. Using information from the Kirkpatrick evaluation model and the Guskey evaluation model, the participants’ reactions, the participants’ learning, the participants’ behavior changes, and the student learning outcomes should be considered when evaluating the effectiveness of training activities.

To evaluate the participants’ reactions, it is recommended an evaluation committee be formed from a broad base of fire training program managers, fire instructors, fire chiefs and firefighters. The evaluation committee should initially perform as a focus group to assist with the development of end-of-course evaluation forms. The end-of-course evaluation forms should include content questions, process questions and context questions (Guskey, 2000). Appendix I includes several examples of questions that could be considered for inclusion in an end-of-course evaluation form. It will be necessary to tabulate the numerical results from the end-of-course evaluations and then measure the reactions against an establish standards of performance (Kirkpatrick & Kirkpatrick, 2006). If the standards of performance are not met, changes to the curriculum, instructor, facilities, testing instruments, or student prerequisites may be necessary.

To evaluate the participants’ learning level, it is important to use standardized tests that cover the subject matter of the training program in a comprehensive format. Written tests should be both reliable and valid to ensure the results are appropriately applied as an evaluation instrument when measuring student learning. A reliable test should be consistent, accurate, unambiguous, and unbiased. A valid test should measure student learning as it relates to course
content. Kirkpatrick & Kirkpatrick (2006) suggest that “a standardized test can be used only to
the extent that it covers the subject matter taught in the training program” (p. 46). Because the
written and performance tests are used by the WDFPES as instruments to evaluate the learning
level of students, careful scrutiny of the testing process should be conducted to ensure the tests
are reliable, valid, fair, repeatable, and applicable.

To evaluate the participants’ behavior changes, long-term evaluation forms similar to
those used by the National Fire Academy should be developed. The same evaluation committee
used to develop end-of-course evaluations should also be used to develop the necessary long-
term evaluations. Kirkpatrick and Kirkpatrick (2006) suggest both the students involved in the
training and the students’ supervisors should complete long-term evaluations. The supervisor
long-term evaluations can be extremely beneficial, because the supervisor can provide an
external perspective and recognize changes that result from the training. Both types of long-term
evaluations should be conducted after the students have had an opportunity to apply his or her
new skills and knowledge. The National Fire Academy (NFA) conducts both types of long-term
evaluations approximately six months after course completion (U.S. Fire Administration,
National Fire Academy, 2010).

Evidence of student learning outcomes or results should be gathered and analyzed to
determine if the long-term goals are being accomplished as intended. It is important to evaluate
the student learning outcomes in terms of the desired results. For example, if the objective of a
training program is to reduce the frequency and/or severity of accidents in a fire department, the
results should be measured in accordance to this objective. Some training programs can be
easily evaluated for results by simply tracking relevant statistics for improving trends. However,
more abstract training programs such as leadership or communication skills may be much more
difficult to evaluate student results (Kirkpatrick & Kirkpatrick, 2006). Measuring the results level after a training program should indicate tangible results that justify the cost of the training program as it relates to the benefits provided. It will be necessary to generate student learning outcome reports that can be presented to key stakeholder groups regarding the success of the training programs.

Due to the sheer volume of individual training sessions offered by the Training Division, the financial requirements to effectively evaluate both the immediate student reactions and the long-term outcomes for every training session may be unfeasible using traditional data entry methods. The creation of a data management system that is capable of collecting aggregate information from a web-based evaluation forms, storing the necessary data, and generating required progress reports will be necessary to minimize personnel and maintenance costs. The data management system can either be developed specifically to meet the needs of the WDFPES or it can be adapted using existing software programs. Further information regarding the development of a data management system is beyond the scope of this research project.

Additional research regarding this topic may be necessary to adequately evaluate the positive or negative effects that occur once the comprehensive evaluation system has been developed and implemented. Future readers who wish to replicate the procedures used as part of this applied research paper should focus research efforts on selecting applicable reference sources for the literature review, gathering data from similar state fire training organizations, and gathering information from the National Fire Academy’s Evaluation Center. The limitations of this research project have been delineated and future readers should take appropriate steps to minimize the effects of similar limitations in the future.
In summary, the purpose of this applied research project was to identify methods of evaluating the effectiveness of fire training programs administered by the WDFPES Training Division. To address this problem, it has been recommended that a comprehensive evaluation system be developed. The evaluation system should include explicit long-term goals, systematic procedures to accomplish the intended goals, clearly defined criteria to evaluate the effectiveness of activities performed, and a data management system to collect aggregate information and produce progress reports that demonstrate progress toward the defined goals.
References


Appendix A – Daniel Bulkley Telephone Interview Summary - Government Organization

Note: This narrative is a summary of the interview. It is not meant to be a complete representation of the entire interview, but rather a summary of the pertinent information covered during the interview.

Interviewee:

Daniel Bulkley

Health & Safety Consultant

Wyoming Occupational Safety and Health Administration

April 21, 2011

12:30 PM – 1:15 PM

**Question:** What is the Wyoming Occupational Safety and Health Administration (OSHA) and how is it different than Federal OSHA?

**Answer:** The Federal Occupational Safety and Health Administration was created in 1971. OSHA developed numerous standards under the Codes of Federal Regulation (CFR) to provide workplace safety. There are currently 22 States and jurisdictions operating complete State plans (covering both the private sector and State and local government employees) and 5 - Connecticut, Illinois, New Jersey, New York and the Virgin Islands - which cover public employees only. States must set job safety and health standards that are "at least as effective as" comparable federal standards. (Most States adopt standards identical to federal ones.) States have the option to promulgate standards covering hazards not addressed by federal standards (For example, Wyoming has created their own state specialized oil and gas regulations that are specific to Wyoming). A State must conduct inspections to enforce its standards, cover public (State and local government) employees, and operate occupational safety and health training and
education programs. In addition, most States provide free on-site consultation to help employers identify and correct workplace hazards. The penalties for these state plans are suppose to be at least as stringent as federal penalties, but can be higher (Wyoming has adopted the federal penalty schedule).

**Question:** How would you evaluate the training program of a fire department to ensure compliance with the WY OSHA?

**Answer:** There are many regulations that would need to be evaluated to ensure compliance. Before the evaluation, the Compliance/Consultant Safety & Health Officer “CSHO” would need to establish the responsibilities of that fire department, once established the applicable regulations would be applied. In the case of a fire department evaluation, applicable regulations may include examples such as: General Industry Standards -1910. (120), (132), (133), (134), (135), (136), (138), (157), (158), (164), (165), (242), (243), and (244), etc.

Once the applicable regulations have been identified, CSHO would evaluate the training records to ensure compliance. CSHO would then evaluate the policies and procedures and the training documentation. Each regulation typically contains specific requirements related to training. To ensure compliance with each requirement, CSHO would review the type of training conducted, who offered the training, and how frequently it was conducted. Additionally, CSHO would evaluate the type of programs, lesson plans, training facilities, and instructor qualifications. CSHO would specifically review the training documentation for levels of participant’s certification as well as any refresher training for individual employees.

If an organization is deficient in its training program, CSHO would write up a hazard report to document any problems. The hazard report describes exactly what the identified hazards are and the specific requirements the employer must fulfill for compliance. The
employer then would need to create an action plan that would outline the steps the employer will implement to ensure compliance with the identified hazards in the report. Then OSHA would review the submitted action plan to ensure the hazards are addressed properly and the action plan is sufficient to meet minimum requirements of the regulations. Finally, the employer would need to submit appropriate documentation to provide positive proof of their own fulfillment of each action item in the action plan. If necessary, OSHA can also provide template programs to assist with compliance for the organization.

**Question:** How do you provide training for your own OSHA employees and evaluate training?

**Answer:** Typically the agency brings in specialists/those employees with a background who are knowledgeable about the specific areas of regulation to train our own people. These internal training sessions take place to ensure our own investigators/consultants are capable to accurately review specific areas of concern and ensure regulation compliance. CSHO’s typically provide informal verbal feedback at the end of these training sessions to the instructor and management. If time permits there is cross talk between parties and follow-up is provided if needed. CSHO’s also attend the OSHA training institute (OTI) for formalized training or OSHA recognized training institutions. There are specialized evaluation instruments used at these facilities to measure comfort levels, relevance, applicability, etc. Once the evaluations are completed, the director/course supervisors at OTI/Institutions use the evaluations as part of a performance evaluation for the instructors of each class. The course evaluations are also used to justify facility upgrades, and equipment purchases and other necessary materials for the courses. The course evaluations are also used in the decision making process to retain instructors for future courses or look into getting additional instructors if needed. If the instructors are not proficient in their offered training, the director/course supervisor will use the evaluations as a decision
making tool to bring in a different instructor for future course offerings or get instructor additional training. Finally, the OTI administers/course supervisors both pretests and posttests to evaluate the progress of students during their time at OTI/Institutions. The results from these pretests and posttests are also used as an evaluation tool for the course offerings.

**Question:** Please explain any positive or negative impacts your evaluation instrument(s) have had on training programs you have reviewed.

**Answer:** CSHO would say based on all training attended at OTI, the training helped CSHO be able to better understand the regulations and how to extract data from what employers provided to determine if within minimal requirements of regulations. It has also provided CSHO a broader knowledge base to be able to better explain/interpret regulations and CSHO can evaluate the employers programs, training, and procedures so CSHO can see if an employer properly followed the intent of the regulation for his/her specific situation. It also exposed CSHO to multiple types of instruments/equipment other than the ones used by CSHO for his inspections so he can assist employers with questions or recommendations for monitoring equipment that a company might use. The only negative issues CSHO would identify is that sometimes the course is not long enough or does not cover the regulation to the detail that would better help CSHO’s better understand the subject issue. Typically this information would have to be provided at the field office during on-the-job training or management contacts Regional Office to try and get CSHO’s a better explanation or information to understand issue.

*End of interview summary.*
Appendix B – John Watterson Telephone Interview Summary – Industry Representative

Note: This narrative is a summary of the interview. It is not meant to be a complete representation of the entire interview, but rather a summary of the pertinent information covered during the interview.

Interviewee:

John Watterson
Industrial Safety Consultant
Wyoming Industrial Training
July 01, 2011
3:00 PM

Question: How does your organization assess the effectiveness of your training programs?

Answer: I teach a 10-hour construction safety course, the 3-day collateral duty, and the Wyoming Oil & Gas Safety Standards course. At the end of each course, I hand out a class evaluation form. It is a one-page evaluation sheet with questions about the course objectives, value of training, audiovisual aids, handouts, classroom arrangements, instructor presentation, course subject areas, and additional comments from the students.

Question: How are the evaluation instrument(s) distributed?

Answer: Each evaluation sheet is distributed at the end of each course to all the student participants.

Question: How are the results from the evaluation instrument(s) gathered?

Answer: The instructor gathers hard copy pen & paper sheets at the end of each course.

Question: How are the results from the evaluation instrument(s) interpreted?
Answer: The only thing we use is the hard copy evaluation forms. No other instruments are used to assess effectiveness of the course. My consultation supervisor reviews each evaluation sheet, looks for any problem areas, and ensures the training has been accomplished.

Question: Who sees the results from your evaluation instrument(s)?

Answer: The evaluation sheets are given to my consultation supervisor and the OSHA program manager for Wyoming. They each review the evaluation sheets and monitor for any problems and for code compliance issues.

Question: How costly (financial) are the evaluation instrument(s) to your organization?

Answer: The only cost is for the printing of the evaluation sheets. There is no data entry or other software used by our managers. We simply review each evaluation sheet as it arrives.

Question: Please explain any positive or negative impacts your evaluation instrument(s) have had on your fire service related training programs.

Answer: The consultation supervisor and OSHA program manager make changes as necessary based on the feedback from the students, company owners and superintendents from the class.

End of interview summary.
Appendix C – NFA Long-Term Evaluation Form for Students

This questionnaire asks you to evaluate the NFA training course you recently completed. All responses will be treated confidentially. Do not write your name on this form. Although the questionnaire has an identification number, this number is used only to track the return of the form. After all data have been electronically scanned, your questionnaire will be destroyed, and your answers will be processed in an aggregate form with the responses of all other NFA graduates so that no one will know what you individually have said.

Part I: Please Tell Us About Your Background and Place of Work

1. If you know it, please tell us your FDID#?

2. How many NFA resident courses have you taken in the course of your career?
   For example: If none, please enter: 0; if one, please enter: 0.1
   0 1 2 3 4 5 6 7 8 9

3. How many NFA field courses have you taken in the course of your career?
   For example: If none, please enter: 0; if one, please enter: 0.1
   0 1 2 3 4 5 6 7 8 9

4. How would you describe the primary population served by your department or organization?
   (Mark all that apply.)
   - Rural
   - County/district
   - Institutional
   - Suburban
   - Parish
   - Governmental
   - Urban
   - Statewide
   - Other:

5. How would you describe your service organization?
   - Career fire service
   - Career and volunteer fire service
   - Volunteer fire service
   - Allied professionals
   - Private/contract
   - Other (Please specify):

6. Please estimate the size of your department.
   - 1 to 25 persons
   - 26 to 50 persons
   - 51 to 100 persons
   - 101 to 200 persons
   - Over 200 persons

   (a) What percentage are career personnel?
      - None
      - 1 to 25%
      - 26 to 50%
      - 51 to 75%
      - Over 75%

   (b) What percentage are volunteer personnel?
      - None
      - 1 to 25%
      - 26 to 50%
      - 51 to 75%
      - Over 75%

7. How many years have you been in the fire service?
   (If you are currently retired, indicate the years of service prior to your retirement.)
   - Less than 1 year
   - 1 to 5 years
   - 6 to 10 years
   - 11 to 15 years
   - 16 to 20 years
   - Over 20 years

8. What is your rank?
   - Sergeant
   - Lieutenant
   - Captain
   - Battalion Chief
   - Division Chief
   - Other (Please specify):

Please continue on the next page of this form
Part I: Please Tell Us About Your Background and Place of Work (continued)

9. Please indicate your present primary responsibility. (Mark only one.)
   - Command
   - Fire Suppression
   - EMS
   - Hazardous Materials
   - Training/Instructor
   - Investigation
   - Inspection/Enforcement
   - Other:

10. Please indicate your secondary responsibilities. (Mark all that apply)
    - Command
    - Fire Suppression
    - EMS
    - Hazardous Materials
    - Training/Instructor
    - Investigation
    - Inspection/Enforcement
    - Other:

11. How many years have you held your current responsibilities?
    - Less than 1 year
    - 1 to 5 years
    - 6 to 10 years
    - 11 to 15 years
    - 16 to 20 years
    - Over 20 years
    - Not applicable.

12. What is the highest level of education you have achieved?
    - Less than high school graduation
    - HS graduation or equivalency
    - Some college
    - Associate degree
    - Bachelor degree
    - Graduate degree
    - Other:

13. What is your sex?
    - Male
    - Female

14. How old were you on your last birthday?
    - First digit of age
    - Second digit of age

15. Do you consider yourself of Hispanic or Latino/Latina ethnicity?
    - Yes
    - No

16. What is your race? (Mark as many as apply)
    - White
    - Black or African American
    - Asian
    - Native Hawaiian/Pacific Islander
    - American Indian or Alaskan Native

Part II: Course Feedback

1. Where did you take this course?
   - At NFA in Maryland
   - At a facility in my state
   - Other:

2. Why did you take this course? (Mark all that apply.)
   - Supervisor recommended it
   - Attendance was required for my next duty or assignment
   - For general career advancement
   - Desire to broaden my perspective by working with personnel from departments across the country
   - Desire to increase my technical & professional knowledge
   - Other:

3. Did you check whether the course was from a source other than the National Fire Academy?
   - Yes
   - No (Skip to question 4)

(a) Did you find it available elsewhere?
   - Yes
   - No (Skip to question 4)

(b) Where else was it available?
   - At a facility in my state
   - At a facility in this region but not in my state
   - Other:

(c) Why did you choose to attend the NFA course? (Mark all that apply)
   - Asked, told to, by my supervisor
   - Overall quality of the instruction, materials, etc.
   - Expectation that the content would be 'cutting edge'
   - Expectation that the teaching methods would be 'cutting edge'
   - Desire to interact with peers from around the country
   - No cost to me
   - Modest cost to my department
   - Other:
PART II: Course Feedback (continued)

4. Have you used any of the information and training on the job since returning to your department?
   - Yes (Use the enclosed "Course Summary" card to indicate the extent to which you have used this information or training in your current work.)
   - No (If you indicated no, please skip to question 5 below.)

To what extent have you used information from the topics covered in your training?

<table>
<thead>
<tr>
<th>Topic #1</th>
<th>Used a Great Deal</th>
<th>Used Somewhat</th>
<th>Not Used at All</th>
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<td>Topic #2</td>
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<tr>
<td>Topic #10</td>
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</table>

Now indicate your level of agreement or disagreement with each statement by filling in the appropriate bubble within the range:

5. What I learned from this course helped me do my job better.

6. This course has contributed to my professional development.

7. My supervisor is aware of how this course has improved my job performance.

8. This training has helped the department address fire-related problems in our community's high-risk areas.

9. This NFPA training has led to reductions in the fire-related risks in the community.

10. This course has made me more safety conscious in my work.

11. Prevention ideas from the course have been incorporated into the public education efforts of my department.

12. This NFPA training has improved the performance of my department.

13. Did you leave this training expecting to develop new policies or procedures for your department?
   - Yes
   - No (Skip to part "d" below)

   (a) Did you actually develop them?
   - Yes
   - No (Skip to part "d" below)

   (b) Were these policies or procedures implemented?
   - Yes
   - No (Skip to part "d" below)

   (c) Have these policies or procedures improved the performance of your department?
   - Yes, they definitely have. (Go to item 14)
   - Yes, but only moderately. (Go to item 14)
   - I'm not sure. (Go to item 14)
   - No, they have not.

   (d) Why not? (Mark all that apply.)
   - Too different from current policies & procedures
   - Budget limitations
   - Political considerations
   - Legal, regulatory or union contract considerations
   - It's no longer part of my responsibilities
   - Other (Please specify.)

14. Have you shared the information you learned at the training with colleagues in the department?
   - Yes
   - No (Skip to question 15)

   (a) How did you do it? (Mark all that apply.)
   - Informally, one-on-one
   - Informally, but in a group setting
   - Formally in a training session
   - Other (Please specify.)

   (b) Have those colleagues changed their job performance because of this information?
   - Yes
   - No
   - Don't Know

15. Would you recommend this course to others in your department?
   - Definitely yes
   - Probably not
   - Definitely not
   - Unsure

Please continue on the next page of this form.
16. Have you attended other (non-NFA) courses for fire service personnel in the last three years?  
☐ Yes.  ☐ No. (Skip to item #17)

(a) Where was the training delivered?  
(Mark all that apply.)
☐ At a facility in my State
☐ At a regional facility, but not in my State
☐ Other (Please specify)

(b) Who sponsored this training?  
(Mark all that apply.)
☐ A national professional association
☐ A State fire service agency
☐ A county fire service agency
☐ A State professional association
☐ A technical or community college
☐ Other (Please specify)

(c) Overall, how would you compare your NFA training with the other training you noted above?  
Regarding the training, would you say...
☐ The NFA training was more useful
☐ Both training experiences were equally useful
☐ The other training experience was more useful

(d) Regarding the curriculum materials would you say...
☐ The NFA curriculum was more useful
☐ Both curricula were equally useful
☐ The other curriculum materials were more useful

17. Please describe an incident or circumstance in which you applied your training from this NFA offering.

18. If you could change one thing to improve this training course, what would it be?

19. What do you think are the new, emerging issues in the fire service field that should be the topics for future NFA training classes?

20. Finally, please add any comments you may have.

Thank you for completing this questionnaire. Please return it to the National Fire Academy in the postage paid envelope provided in your packet.
Appendix D – NFA Long-Term Evaluation Form for Supervisors

**NATIONAL FIRE ACADEMY**
**Long-Term Evaluation Form for Supervisors**

This two-sided form concerns the course recently completed by the fire service professional (the “attendeé”) identified in the cover letter to this questionnaire. Please respond to the items as best you can. All responses will be completely confidential. Although each questionnaire has an identification number, it is used only to track the return of the form and to link it to the form returned by the attendee. After your questionnaire has been processed, it will be destroyed. Your answers will be reported along with those of other supervisors, and no one will know what you specifically have said. Do not write your name on this form.

Public reporting burden for this form is estimated to average 10 minutes per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, sending and submitting the form. You are not required to respond to this collection of information unless it is valid OMB control number appear in the upper right corner of this form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing the burden to the Information Collection Management, Federal Emergency Management Agency, 500 C Street, SW, Washington, DC 20572. Note: Do not send the completed form to the above address.

---

### Part I: Evaluation of Training Impacts

Please indicate your level of agreement or disagreement with each statement by filling in the appropriate bubble.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Strongly Disagree</th>
<th>Don’t Know or Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The NFA training course has improved the job performance of this attendee.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. This course contributed to the attendee’s professional development.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. This course has prepared the student for the next level of responsibility in our organization.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Material from this training has been incorporated into the prevention work of this department.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. This training has helped the department address fire-related problems in our community’s high risk areas.</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>6. The information gained in this class is likely to improve the performance of this department.</td>
<td></td>
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</tr>
<tr>
<td>7. This NFA training course has met the expectations we had in sending our department member to the NFA.</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>8. The attendee’s participation in this course has led to reductions in the overall fire-related risks in our community.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. The benefit to the department of having the attendee go to the training outweighed the costs involved.</td>
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<tr>
<td>10. The attendee has trained (formally or informally) other colleagues in the procedures learned at NFA training.</td>
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</tr>
<tr>
<td>11. I am likely to recommend NFA training to other department personnel.</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

*Please continue on the reverse side of this form.*
Part II: Supervisor and Department Statistics

1. How many years have you been in Fire and Emergency Services?
   - Less than one year
   - 1 - 5 years
   - 6 - 10 years
   - 11 - 15 years
   - 16 - 20 years
   - More than 20 years

2. How long have you been this employee’s supervisor?
   - Less than one year
   - 1 - 5 years
   - More than 5 years

3. Approximately how many members are there in your department?
   - 1 to 25
   - 26 to 50
   - 51 to 100
   - 101 to 200
   - 201 to 500
   - 501 to 1000
   - 1001 to 2000
   - More than 2000

4. What percent of your department has had NFA training? (For example, fill in bubbles 1, 0, 0 if the percent is 100; and fill in bubbles 0, 1, 0 if the percent trained at NFA is 50%)
   - First digit of percent
   - Second digit of percent
   - Third digit of percent

5. Please estimate the size of the population served by your department/organization.
   - Under 1000
   - 1000 - 2,499
   - 2,500 - 4,999
   - 5,000 - 9,999
   - 10,000 - 24,999
   - 25,000 - 49,999
   - 50,000 - 99,999
   - 100,000 or more

6. Have you ever attended NFA sponsored courses? (Mark as many as apply.)
   - Yes, NFA Direct Delivery/SWP class(es)
   - Yes, NFA Regional Delivery class(es)
   - Yes, NFA Off-Campus Hazmat class(es)
   - Yes, NFA Resident class(es) at Maryland
   - Yes, other NFA classes
   - No, I have never attended NFA classes

   If you have never attended NFA classes, is this because you think the course(s) would . . . (Mark all that apply.)
   - Not be up to your expectations?
   - Have material that is too dated?
   - Take too much away from your work time?
   - Require too much travel time?
   - Be more useful if offered online?
   - Conflict with family responsibilities?
   - Other:

1. What changes, if any, have you seen in your employee as a result of attending the NFA training class?

2. Has the attendee proposed any organizational changes since the training? If so, please describe them, and indicate how these changes have impacted your department.

3. Please tell us what you think are the new, emerging issues in the fire/emergency services field that should be topics for future NFA courses.

4. Additional comments?

Thank you for completing this questionnaire. Please return it to the National Fire Academy in the postage paid envelope provided.
Appendix E – NFA Long Term Evaluation Report

NFA Long Term Evaluation Report

FY 2009

400 Student Responses
400 Supervisor Responses

I. Course Feedback

Four Months After Training - Extent to which students/supervisors agree that...

II. Training Comparisons - NFA vs. Others

Student has also attended other fire service training in last 5 years...

Location of other fire service training:

Assessment of NFA vs. other curriculum materials

III. Training Diffusion

Percent of students who...

Means of sharing training information:

IV. Demographics

Student’s highest level of education

Size of Department
NFA Long Term Evaluation Report

V. Long Term Evaluation Comments

Suggestions to Improve NFA Course*

<table>
<thead>
<tr>
<th>Suggestion</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>No change needed</td>
<td>15.0%</td>
</tr>
<tr>
<td>More hands-on/practical exercises</td>
<td>7.1%</td>
</tr>
<tr>
<td>Update/modify course materials</td>
<td>4.0%</td>
</tr>
<tr>
<td>Length of class</td>
<td>3.3%</td>
</tr>
<tr>
<td>Content Specific Suggestions</td>
<td>2.3%</td>
</tr>
<tr>
<td>Redistribution of class time</td>
<td>2.2%</td>
</tr>
<tr>
<td>General praise of NFA institution</td>
<td>2.1%</td>
</tr>
<tr>
<td>Pre-course materials needed/pre-course prep</td>
<td>1.9%</td>
</tr>
<tr>
<td>Suggestion for class final project</td>
<td>1.3%</td>
</tr>
<tr>
<td>Instructor issues</td>
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</tbody>
</table>

Suggestions for Future Courses*

<table>
<thead>
<tr>
<th>Suggestion</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Student</td>
<td></td>
</tr>
<tr>
<td>Grants/budget issues</td>
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</tr>
<tr>
<td>Firefighter safety/biopsychology</td>
<td>1.9%</td>
</tr>
<tr>
<td>HR Issues/reduction/retention</td>
<td>1.8%</td>
</tr>
<tr>
<td>Nuts &amp; Bolts</td>
<td>1.4%</td>
</tr>
<tr>
<td>EMS</td>
<td>1.3%</td>
</tr>
<tr>
<td>Terrorism/WMD/Homeland Security</td>
<td>0.9%</td>
</tr>
<tr>
<td>Integrating/coordinating emergency services</td>
<td>0.9%</td>
</tr>
<tr>
<td>Leadership/management skills</td>
<td>0.6%</td>
</tr>
<tr>
<td>Technology</td>
<td>0.6%</td>
</tr>
<tr>
<td>Volunteer versus career issues</td>
<td>0.3%</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Suggestion</th>
<th>Percentage</th>
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</thead>
<tbody>
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<td>Supervisor</td>
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<tr>
<td>Grants/budget issues</td>
<td>17.0%</td>
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<tr>
<td>Firefighter safety/biopsychology</td>
<td>6.1%</td>
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<tr>
<td>HR Issues/reduction/retention</td>
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<tr>
<td>Nuts &amp; Bolts</td>
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<tr>
<td>EMS</td>
<td>4.3%</td>
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<tr>
<td>Prevention</td>
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<tr>
<td>Integrating/coordinating emergency services</td>
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<tr>
<td>Firefighter safety/biopsychology</td>
<td>3.1%</td>
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<tr>
<td>Volunteer versus career issues</td>
<td>2.6%</td>
</tr>
<tr>
<td>Technology</td>
<td>2.2%</td>
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</tbody>
</table>

* Only the top 10 suggestion categories are depicted, so percentages may not add to 100%.
Note: This narrative is a summary of the interview. It is not meant to be a complete representation of the entire interview, but rather a summary of the pertinent information covered during the interview.

Interviewee:

Dr. John H. Newman
Program Director
Synthesis Professional Services, Inc.
Contract Service Provider for the National Fire Academy Evaluation Center
July 5, 2011
2:30 PM – 3:00 PM

Question: How effective are the evaluation instruments used by the NFA Evaluation Center?

Answer: The instruments have been quite effective in the sense that they provide measurably valid and reliable results. The senior administration officials disseminate course information and utilize evaluation results in governmental reports. The statistical evidence strongly supports the continued use of the instruments by the Evaluation Center.

Question: How are the evaluation instrument(s) distributed?

Answer: They are distributed online through web-based software. The response rates for all the respondents are very high. The transition from pen-and-paper to online instruments did not change end of course response rates significantly. The reliability of the evaluation instruments actually increased.

Question: What are the primary differences between the end-of-course evaluations and the long-term evaluations?
Answer: The end of course evaluations are immediate course satisfaction ratings, known as level one or reaction level evaluations from Kirkpatrick’s evaluation model. The long-term evaluations are considered level three evaluations. The level three behavior evaluations are only designed to measure student behavior changes as a result from the student’s participation in the training program. Level three evaluates what is observable in the home organization. The level four or results level is not evaluated using the NFA evaluation instruments. Level four would be measured through statistical analysis of the community impact regarding the training.

Question: How are the results from the evaluation instrument(s) gathered?

Answer: The NFA uses a software application to gather the information from the web-based responses and creates a database system. The web-based evaluations ensure student confidentiality is maintained. A hard copy back-up can be mailed if the web-based instrument is not accessible.

Question: How are the results from the evaluation instrument(s) interpreted?

Answer: The analysis and summary of results from the evaluation instruments are produced by the training evaluation center. The NFA senior administrative officials interpret the evaluation center reports. The Deputy Superintendent and the Superintendent of the National Fire Academy as well as the course instructor all have access to the reports generated. The analysis and summary of results are handled by the evaluation center, while the evaluation, judgments and recommendations are made at the senior administrative level. The senior officials may consult the center if clarification or further analysis of the information is necessary.

Question: Has the evaluation system used by the NFA been used to justify continued budgetary expenses for the program?
Answer: The information generated by the evaluation center is used by officers at the NFA, FEMA, and Homeland Security. The results are used in briefings to congressional committees and members but how they are used should really be addressed by Dr. Oniel the Superintendent.

Question: Please explain any positive or negative impacts your evaluation instrument(s) have had on your fire service related training programs.

Answer: The information is continuously used in the refinement of courses offered and the structure of the curriculums as well as other uses by the faculty, etc.

End of interview summary.
Appendix G – Transcription of Phil Oakes Interview

**Shad:** The date is March 3, 2011, 8:03pm conducting an interview with Phillip Oakes, Training Program Manager, what is your official title?

**Phil:** Just that

**Shad:** Training Program Manager for the Wyoming State Fire Marshal’s Office, Department of Fire Prevention & Electrical Safety

**Shad:** Alright, Phil I asked you to conduct this interview with me, I want to understand how the State of Wyoming, State Fire Marshal’s Office evaluates the training programs that we offer currently and I wanted to ask you a few questions about how you administer the training programs and specifically what you look for when you do an evaluation.

**Phil:** The most immediate way that our programs are evaluated is by our basic standard evaluation sheets, that is the one that the student fills out upon the completion of a class. Some students treat that accurately, some students, you know, the famous, circle all the fives kind of maneuver. Those sheets are then collected by the instructor and forwarded onto our office down in Cheyenne. When they cross my desk or when they cross either Ashley or Rita’s desk, I take a look at them. Right now we don’t have any formal tracking method for those results because we don’t have the manpower to do it because you are talking about 8,000 to 9,000 of those evaluations a year which would pretty much take up a three-quarter time position to actually collate that data. What I’m looking for is a I’m looking for trends, either the students are happy or not happy and if they aren’t happy, they will tell you typical more than if they are. I’m looking make sure that the . . . what you all are teaching matches paperwork kinda matches. Reviewing to see if there was any problems, any difficulties if something came up during the course, you know, I might get one or two and call the instructor and say “Hey what was the issue
with this guy or what was the problem” and you usually don’t have a problem remembering him, (laugh) when that does occur. Those, you know, for the most part, we really don’t have a data base tracking system because again it would take three-quarter or half time person to at least get that stuff entered, but those are stored and kept on file for a three year period. Those are in turn and on occasion actually pulled and reviewed by the State of Wyoming Department of Administration and Information, specifically, the program’s auditing division. They are not only pulled and reviewed for quality assurance, but for the same thing I’m looking for “Did the instructor do an ok job”, “Did the students rate him ok”, things of that nature. On an annual basis, I also have to report the finding of those forms and make sure the numbers that we have fall into a certain range of discrepancy, whether it is 97% or 103% of what we recorded with the State. It’s kind of a quality control measure that I have to, a self audit if you will, that I’m required to do every year by the State. As a matter of fact, the next one of those is coming up soon as I get back to Cheyenne.

Shad: Describe that in a little more detail, between 97% and 103% what are you trying accomplish?

Phil: You are allowed a +/- 3% deviation. Kind of similar to our test questions, in that the statics that you report they understand could have a deviation in the statics that you report based upon the actually physical paperwork that you are able to provide so I have to be within +/- 3%. All the sheets of paperwork in the Wyoming office has to be within +/- 3%. And that includes ratings, ranking, things of that nature when it goes over to the Department of Administration and Information.
Shad: I didn’t realize that. So if I teach a class with 20 students in it, but only 10 students fill out the evaluation at the end, then you’re 10% or your 50% short.

Phil: I am 50% short, but if I have the roster to back up the numbers, then I’m usually ok.

Shad: ok

Phil: That is the big thing, if you tell me you have 20 students and only have 10 on the roster, then I’m in trouble a lot more than if I only had 10 evaluation sheets. Because what they will do is check the roster, they will verify some of those evaluation sheets more for quality than quantity, but the roster is the key form too.

Shad: Ok. Alright, so then we track the number students we offer training to by the roster and we track the number of hours that the class

Phil: Contact hours, yes

Shad: Contact hours - contact hours per student per class, is that correct?

Phil: Hmm, contact hours per student, per course. The three main things we are looking for are obviously number of classes right up front, the topic, the number of students in that class, and the number of hours for that class. Those are the three biggies, followed by certification. Number of certificates issued because certification is end result of training. And if you are looking for another quality control measure that is another fairly good quality control measure, not necessary for the State Certifications although that has gotten better, because it is harder and harder now to basically pencil whip, for a lack of a better term, pencil whip through our certifications, but with the Nationally Accredited ones because that is third party validation. So that is proof that student was taught, was instructed, was tested, was evaluation and has come through and should know their stuff. So that is actually another good quality control measure that we have established. As off the wall as it may sound, I like to think another good quality control measure, that I track, not
on a daily basis, but on a regular basis, is the number of firefighter injuries and the number of firefighter fatalities we have had in the State of Wyoming. Both of those number have been either steady or going down. Firefighter injuries were in the 40s now they are in the 20s and we have not had a fatality (knock sound) in the State of Wyoming for over 5 years. Which by the way happens to coincide almost to the date of our pro-board accreditation.

Shad: You bring up a good point that I didn’t think about doing my pre-interview preparation, but we can use the written test as an evaluation tool for firefighters as well because they have to pass a written for most of our certifications offer through the State.

Phil: And along those lines, most states actually only test their students to a 70% pass/fail. Our state is 80% so we are actually holding our students to a higher standard than about 47 of the other 50 states. There are only 3 states out there that offer, that request 80%. If you are going to ask me what their percentages or where the states are, I’m going have a hard time remember them, but I know there are 3, us and 2 others.

Shad: Then we also require for pro-board accredited qualification, we require a third party to come and evaluate them doing a skills performance evaluation. So that could also be construed as an evaluation tool or instrument to evaluate the effectiveness of training program, whether or not our firefighters are competent or capable to perform at a certain level.

Phil: Yep. Know to do a true impact evaluation survey; we don’t have that tool in place right now. Because if I’m looking at a true impact evaluation survey, I would honestly come back several months later and come back to that same fire department, same fire chief and say, “Did this training help you?” “Did, this you how, was this worthwhile, was this a good use of our time, has it helped save firefighters lives, reduce injuries, improve their performance of your department, and if so how?” Okay. I know the National Fire Academy is doing follow up
surveys right now, I don’t know what their success rate is with that or if it has changed any of their programs. And we don’t do that in a formal setting, we do that in an informal way because you get requests, as trainers, to come back, and do it again and do it again, and you see the improvements that are occurring at the local level. In an informal and in a way that is typically not thought of or a hard way to correlate information, I will tell you the dollar lost per fire in Wyoming has basically stayed fairly steady or decreased actually in the last couple of years. You know, as our, coinciding as our class work and our student numbers has risen. I don’t like using that as a direct correlation, it’s kind of an indirect effect, because, you know, you burn up a truck in Gillette that is a coal hauler, there goes those number boom, there goes an outline and throws those numbers all out of whack, but an indirect correlation, you can see cause and effect going there.

**Shad:** Alright, my next question will be is, you kind of lead into it, was how would you effectively, measure the outcome of the training that we offer? What would you like to see regarding outcomes? Do we currently evaluate anything? And if not, how would we do so?

**Phil:** As far as outcomes go, other than certification, because again certification is the end of our process as it stands right now. Other than certification, I really don’t see a way that we evaluation long term, besides, obvious reduced firefighter injuries and fatalities. Um, but we have such a low population base to draw from. I don’t even know if that is a really good standard as well. What could we do differently? Obviously go back and revisit, you know, have a survey possibly circulate some sort of survey tool or instrument, um, I would actually say, through the trainers to do maybe a sit down interview with the chief and say “hey, we’ve been here for a while, what have you seen for improvements?” But in terms for the fire ground obviously you are looking at not response time, but response capabilities, you know, through this training, when
your guys now arrive, what are you seeing differently chief and how much quicker are you getting to the door? Are the fires you are having small, easier to contain, is it more organized. I don’t know how you really say that. Are your fire grounds getting better? Or are the still organized chaos? Or do your people know what they are doing? Have you hurt anybody lately, (laughs), you know really that’s the number one way we actually can tell we are making a difference, seriously back to that injury and fatality thing, because everything else is so subjective, you know. Are your scenes working better? Are your people doing better? Chief might say “Yeah, we are doing great now, we can do this, we can do this, we can do this,” but now can you measure it how much? You know, do you measure it as a time frame, how much faster does it take you to get the ladder off the truck and get the ladder in the building? You know, when you went to this fire, did you ladder all the building before someone went up to do a search, you know ladder all the windows before someone did a search on the second floor? Things of that nature. You know, did your folks actually decide whether to do vertical ventilation or positive pressure attack or things of that nature. It is so subjective in building, building specific, it’s really a hard feel to your fingers around, or it’s to get your hands around, you know.

Shad: The next question will be if your supervisor or the state legislator or the governor, or somebody came to you and said “your budget is currently X amount and we need to justify your current budget, can you produce any numbers that justify your current budget? Can you show us any improvement or trends or changes in your budget to justify why we spend the money on your budget?”

Phil: Absolutely, I don’t have a problem with that because if there is one thing about governments and legislators and specifics, they want they want the numbers. That is why we
have to hard track the numbers in term of student counts, class counts, certificates issued, student contact hours and all that stuff. That is what drives money to me. I mean I just spent some time back at the National Fire Academy. That is what drives them to show their folks in Washington DC that we have the student counts. They don’t typically ask, and this is odd and I know why this is what your paper, they don’t ask was your training effective, they ask did you do it? And in terms of that, I have to numbers back to, I think it is 13 years now, in terms of our class counts, student counts, contact hours, certification issued, fires investigated, you name it Actually fires investigated go back about 20 years. I have all that information and provide that data and provide that we basically last year was a record year for classes and hours and student counts. We have about 4000, maybe 4200 firefighters in the state of Wyoming. We had about 8500 students go through our courses. (laughing) So in theory, ever firefighter in Wyoming should have seen us twice. (laughing continues)

**Shad:** How do you determine what level of course, what type of course you are going to offer? Is it based on any feedback? Or needs? Is there a needs assessment done? Or how do you make that determination?

**Phil:** There is an informal needs assessment done on a pretty regular bases and that is done by the trainers. That is where in your evaluation forms and in all the trainers’ evaluation forms, it says “go out and make contact with the local trainer officer or fire chief in your jurisdiction and find out what they need.” That is exactly the way to do it. Find out what they need, talk to them, figure out what their problems are, what their issues are. A) provide me feedback and B) you know, so I know if there is something we need to provide them support wise from Cheyenne and B) you know what they need and possible schedule out in the long term to get their needs taken
care of. That is kind informal process, but it works the most because it gives the one on one touch which seems to work very well in Wyoming.

Shad: If there was an assessment tool, evaluation tool, that evaluated the outcomes or the effectiveness training that we offered and that it also included a component to make suggestions for future course offering, would that be a value tool to you as a training program manager?

Phil: Oh, absolutely, because one of the things that we don’t do a lot of, or at least in a formal process is course development. I mean, our folks, you know, all the trainers and myself will put together classes or things of that nature on a fairly frequent basis, but it’s not formal process where we say let’s go and sit down and develop the new hazard material technician program as it applies to Wyoming. We don’t do that. We don’t have the time, money or resources. And honestly we can’t prove to the legislator right now that this is absolutely something that the fire service wants, we don’t have the evaluation tool in place. You know, I mean tonight was a perfect example of a survey tool. “Hey, you’ve all been here for last 8 hours discussing this program, is it something we want to incorporate into our certification standards? (laughs)

Shad: Do you have anything you want to add about the effectiveness of the evaluation to the training program?

Phil: I would like for it to improve. I don’t have the money to necessarily as far as the . . . get someone to sit there and do data entry for the 5 or 6 hours a day to keep track of it. It’s fairly informal right now, so it could stand some improvement, but I, I mean the proof is in the pudding. We’ve got more requests on than we know what to do with. And maybe we don’t have a formal way to track it, but I don’t think we are doing too bad with the informal stuff.

Shad: Okay, that makes sense. Alright, I don’t have anything further

End of interview.
Appendix H – State Training Agency Questionnaires

**ALASKA EVALUATION QUESTIONNAIRE**

1. What type of evaluation instrument(s) does your organization use to assess the effectiveness of fire service related training programs?

   Answer: We use a paper course/instructor evaluation form

2. How are the evaluation instrument(s) distributed?

   Answer: The evaluation forms are given to the students at the beginning of class.

3. How are the results from the evaluation instrument(s) gathered?

   Answer: The evaluation form is collected by the instructors at the end of the course.

4. How are the results from the evaluation instrument(s) interpreted?

   Answer: Comments are categorized by positive, negative or possible future efficiency idea.

5. Who sees the results from your evaluation instrument(s)?

   Answer: The instructors review them onsite, the regional fire training specialist reviews them when they are returned to the office and I review each evaluation before they are filed in the course file.

6. How costly (financial) are the evaluation instrument(s) to your organization?

   Answer: This method is very cost effective. The only expense is the printing of the evaluation form.

7. Please explain any positive or negative impacts your evaluation instrument(s) have had on your fire service related training programs.

   Answer: We have made several improvements due to information provided by the evaluation form; we implemented a method to allow students to register for courses online via our website, we have added new courses to our schedule and we have worked with instructors to address safety issues which were brought to our attention.
## Alaska End-Of-Course Evaluation

Please circle the number to rate the following items – (1 indicating Strongly Disagree --10 indicating Strongly Agree)

<table>
<thead>
<tr>
<th>Course</th>
<th>1 2 3 4 5 6 7 8 9 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>I will recommend this course to others.</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
</tr>
<tr>
<td>The technical content of this course was appropriate for the level of the course.</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
</tr>
<tr>
<td>The student materials were useful during the class.</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
</tr>
<tr>
<td>The student materials will be useful in the future.</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
</tr>
<tr>
<td>The exercises/activities helped to understand the course material.</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
</tr>
<tr>
<td>The exercises/activities will help you to apply the course concepts to your job.</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
</tr>
<tr>
<td>All course activities were conducted safely.</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
</tr>
<tr>
<td>The course goals and objectives were met.</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
</tr>
<tr>
<td>The course was a good use of my time.</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
</tr>
</tbody>
</table>

How do you think this course will increase your capabilities?

What portion of this course was most valuable?

What specific suggestions do you have for improving the course?

<table>
<thead>
<tr>
<th>Instructor</th>
<th>1 2 3 4 5 6 7 8 9 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructor Name:</td>
<td></td>
</tr>
<tr>
<td>The instructor demonstrated up-to-date technical knowledge of the topic presented.</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
</tr>
<tr>
<td>The instructor was well prepared.</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
</tr>
<tr>
<td>The instructor encouraged student participation.</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
</tr>
<tr>
<td>The instructor was open to other view points.</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
</tr>
<tr>
<td>The instructor ensured that activities were conducted safely.</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
</tr>
<tr>
<td>I would attend another course from this instructor.</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
</tr>
</tbody>
</table>

What could the instructor do to improve their instructional style or technique?

<table>
<thead>
<tr>
<th>TEB</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>How did you find out about this course?</td>
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<tr>
<td>Was the registration process satisfactory?</td>
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<tr>
<td>If not, how could we improve?</td>
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<tr>
<td>Any other comments not covered by other areas of this form?</td>
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</tr>
<tr>
<td>Please provide a list of specific courses you would like TEB to offer:</td>
<td></td>
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</tbody>
</table>
NEBRASKA EVALUATION QUESTIONNAIRE

1. What type of evaluation instrument(s) does your organization use to assess the effectiveness of fire service related training programs?
   Answer: We get feedback from our volunteer firefighters association. We also get feedback from our fire service instructors association. We used to have an evaluation team to evaluate the effectiveness our training. Four years ago, the evaluation committee and advisory board was discontinued by our governor and we no longer have access to that program. We also rely on site evaluations to comply with Pro-Board and IFSAC requirements. We also do quarterly in-service training with our training staff. During these meetings, we ask for feedback from the instructors regarding the training programs. We plan to reinstate evaluations of the instructors soon, but it has not been implemented yet. In July of 2010, we will be meeting with a consortium group of volunteer firefighters association, the training group, and the fire service instructors association, and the arson instructors association to review what is being done regarding training in the state of Nebraska to do a needs assessment. We plan to look at what we are doing and what we need to do in the future based on this meeting.

2. How are the evaluation instrument(s) distributed?
   Answer: N/A

3. How are the results from the evaluation instrument(s) gathered?
   Answer: N/A

4. How are the results from the evaluation instrument(s) interpreted?
   Answer: N/A

5. Who sees the results from your evaluation instrument(s)?
   Answer: N/A

6. How costly (financial) are the evaluation instrument(s) to your organization?
   Answer: N/A

7. Please explain any positive or negative impacts your evaluation instrument(s) have had on your fire service related training programs.
   Answer: N/A
NEW MEXICO EVALUATION QUESTIONNAIRE

1. What type of evaluation instrument(s) does your organization use to assess the effectiveness of fire service related training programs?

   Answer: We have a course evaluation that goes out to students at the end of every class. It is a basic questionnaire. It goes over the learning environment, the instructors, the training materials, and suggestions for improvement. The document is two pages long with several. We also rely on informal feedback from our instructors. We also monitor the results from our written tests using the LXR software.

2. How are the evaluation instrument(s) distributed?

   Answer: The instructors hand out the evaluations at the end of each course.

3. How are the results from the evaluation instrument(s) gathered?

   Answer: The students are left alone in the classroom to fill out the evaluations. Then the evaluations are collected and submitted to the course coordinators. We have seven instructor coordinators to cover the necessary training. Each course coordinator schedules the courses, determines the necessary curriculum, and monitors the progress of the course as well.

4. How are the results from the evaluation instrument(s) interpreted?

   Answer: The course coordinators review the evaluations to look for any problems. The evaluations are then filed with each course file including rosters and other relevant information. No long term statistics are collected or maintained.

5. Who sees the results from your evaluation instrument(s)?

   Answer: The course coordinators see the evaluations. If there are any problems, the instructional staff supervisor reviews the evaluations. Finally, the instructors also review the evaluations.

6. How costly (financial) are the evaluation instrument(s) to your organization?

   Answer: Just the printing costs of the evaluations.

7. Please explain any positive or negative impacts your evaluation instrument(s) have had on your fire service related training programs.

   Answer: The evaluations collect feedback about several factors such as adjunct instructors and pilot courses. We review the feedback closely and take appropriate steps to correct problems. We ask the students to avoid minor complaints about food or lodging and instead focus on major problems related to the instruction, facilities, props, materials, etc.
### NEW MEXICO FIREFIGHTERS TRAINING ACADEMY
#### Participant Evaluation

<table>
<thead>
<tr>
<th>Course Title:</th>
<th>Date(s) Attended:</th>
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</thead>
<tbody>
<tr>
<td>Course Location:</td>
<td></td>
</tr>
<tr>
<td>Instructor(s) Name:</td>
<td></td>
</tr>
<tr>
<td>Your Present Fire/EMS Position (Rank):</td>
<td></td>
</tr>
</tbody>
</table>

**Directions:** Carefully read each question and mark the appropriate box.

#### Course Preparation (If applicable)
Did you receive your pre-course assignment sheet and/or course materials in a timely manner?
- [ ] Yes
- [ ] No

The pre-course assignment explanation was:
- [ ] Very Clear
- [ ] Clear
- [ ] Confusing
- [ ] Faulty

#### Course Materials
Course Textbook Value:
- [ ] Excellent Resource
- [ ] Adequate Resource
- [ ] Limited
- [ ] None

Visual Materials were:
- Good quality
- Related to the course
- Appropriate number
- Easy to see

Printed Materials were:
- Well organized
- Complete
- Readable

#### Course Content
Course organization was:
- [ ] Well organized
- [ ] Well planned
- [ ] Somewhat unplanned
- [ ] Disorganized

- [ ] Contained enough activities.
- [ ] Was a reasonable length.
- [ ] Covered the right amount of material.
- [ ] Contributed to my knowledge and skills.

*PLEASE TURN PAGE OVER TO COMPLETE*
**Course Content** (continued)

Related to my needs.
- [ ] Strongly Agree
- [ ] Agree
- [ ] Unsure
- [ ] Disagree
- [ ] Strongly Disagree

Is worth recommending to others.
- [ ] Strongly Agree
- [ ] Agree
- [ ] Unsure
- [ ] Disagree
- [ ] Strongly Disagree

**Course Instructor(s)**

Subject Knowledge:
- [ ] Very Well Informed
- [ ] Well Informed
- [ ] Limited
- [ ] Poorly Informed

Assistant Instructor(s):
- [ ] Very Well Informed
- [ ] Well Informed
- [ ] Limited
- [ ] Poorly Informed

Comments:

---

**Overall Presentation:**
- [ ] Stimulating
- [ ] Adequate
- [ ] Routine
- [ ] Dull

**Attitude towards learners:**
- [ ] Very Considerate
- [ ] Considerate
- [ ] Intolerant
- [ ] Inconsiderate and Rude

**Answered questions completely:**
- [ ] Strongly Agree
- [ ] Agree
- [ ] Unsure
- [ ] Disagree
- [ ] Strongly Disagree

**Encouraged participation:**
- [ ] Strongly Agree
- [ ] Agree
- [ ] Unsure
- [ ] Disagree
- [ ] Strongly Disagree

**Course Coordination:**
- [ ] Outstanding
- [ ] Good
- [ ] Barely Satisfactory
- [ ] Unsatisfactory
- [ ] No Opinion

**Facility Evaluation**

*Lighting, temperature, cleanliness, furnishing, equipment:*
- [ ] Outstanding
- [ ] Good
- [ ] Barely Satisfactory
- [ ] Unsatisfactory
- [ ] No Opinion

**Distractions:**
- [ ] Frequent
- [ ] Minimal
- [ ] None
- [ ] No Opinion

To better serve you and your organization, the New Mexico Firefighters Training Academy encourages you to make comments and suggestions about the program delivery or the facility in general. Please use the space below for any recommendations you may have or problems you encountered. *Your comments do count.* Thank You!

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NORTH DAKOTA EVALUATION QUESTIONNAIRE

1. What type of evaluation instrument(s) does your organization use to assess the effectiveness of fire service related training programs?

   Answer: When a class is hosted in North Dakota; there is a survey incorporated and sent with the class roster so that we can assess if the participants found the class valuable and if they felt the class was skills orientated. NDFA asks them if they would recommend the class, what parts of the class they found most effective, if they liked the instructor and if they would like to see any additions to the class materials.

2. How are the evaluation instrument(s) distributed?

   Answer: The surveys are passed out after the class is given. NDFA has also used online surveys occasionally and that has been successful.

3. How are the results from the evaluation instrument(s) gathered?

   Answer: The surveys are either on hard copy or an online assessment. Hopefully, the participants that have attended understand the importance of giving an effective assessment.

4. How are the results from the evaluation instrument(s) interpreted?

   Answer: The evaluations are given to the executive 2nd vice-president, the executive director and the state training director. A comprehensive report is completed where we list the class, instuctor, the overview of the class and comments. At an executive board meeting each class is reviewed and discussed. Recommendations are then made on the status of the class. It is determined if the class will be removed from future events or if classes can be combined to make them more interesting.

5. Who sees the results from your evaluation instrument(s)?

   Answer: Executive board members, the executive director, and the state training officer. In the future; NDFA will be sharing this information with the Governor’s Office, OMB and the state insurance department in hopes of securing additional funding to carry out more training opportunities.

6. How costly (financial) are the evaluation instrument(s) to your organization?

   Answer: Due to the fact that NDFA is state funded; these costs are usually evaluations that can be completed free of charge.

7. Please explain any positive or negative impacts your evaluation instrument(s) have had on your fire service related training programs.
Answer: To date there have been no negatives because the last thing that NDFA wants to do is provide classes that will not benefit the North Dakota firefighters. The firefighters are our most valuable asset and NDFA only wants the best instructors teaching them so that they learn the skills necessary to survive whatever they face on the fire grounds or other incident.

If an instructor was deemed unsuitable to teach at NDFA; this would not be expressed other than to those deciding the status of the classes.

NDFA is incorporating a new protocol in the future for training events such as state fire school. There will be a request sent asking for overviews of what instructors would like to present, the materials they would use for the class, the cost of offering the class and an overview of what national standards would be presented in the class.
### North Dakota Firefighter's Association
Organized June 4, 1884
Incorporated January 20, 1901

### STATE FIRE SCHOOL SURVEY

Please take a moment to rate our services. Thank you for giving us the opportunity to serve you.

**Evaluation Scale:** (5) Superior  (4) Excellent  (3) Good  (2) Fair  (1) Poor

<table>
<thead>
<tr>
<th>Overall Experience</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hotel Room Value</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

**How often do you come to State Fire Schools?**
- ☐ Every year
- ☐ When I can
- ☐ First time

**How would you rate our choice of classes?**
- ☐ Consistent high quality
- ☐ Generally good
- ☐ Quality varies yearly
- ☐ Poor quality

**What classes do you typically like to attend?**
- ☐ Hands-On Classes
- ☐ Wild Fires
- ☐ Auto Extrication
- ☐ Hazardous Materials
- ☐ Structural Firefighting
- ☐ Other

**Which of these classes would you like to attend?**
- ☐ Fire Officer Program
- ☐ Leadership and Training
- ☐ Driver/Operator Training
- ☐ Recruitment and Retention
- ☐ Apparatus
- ☐ Other

**What are some of your concerns?**
- ☐ Cost of transportation
- ☐ Cost of Room
- ☐ Need regional schools
- ☐ Need more structural training
- ☐ Need more library resources
- ☐ Other

**Which of the communication tools works the best?**
- ☐ Email
- ☐ United States Mail
- ☐ Website
- ☐ Telephone
- ☐ Fax
- ☐ Other

---

Future State Fire Schools will provide the opportunity for more hands on type classes. What classes would you like to see incorporated into existing classes?

---

---

---
Additional Comments


About You (optional)

Name ___________________________ E-mail ___________________________

Address ___________________________ Phone ___________________________

City, State, ZIP Code ____________________________________________

May we add you to our mailing list, which offers news and exciting new training?

Thank you for your participation!
OREGON EVALUATION QUESTIONNAIRE

1. What type of evaluation instrument(s) does your organization use to assess the effectiveness of fire service related training programs?
   Answer: Our agency uses a single page evaluation that requests answers to a number of questions.

2. How are the evaluation instrument(s) distributed?
   Answer: They are distributed by our Training Coordinators at the end of each classroom instruction or fire ground evolution.

3. How are the results from the evaluation instrument(s) gathered?
   Answer: Once received back from the student, the evaluations are sent to our administrative assistant who processes the information and enters data into an excel spreadsheet.

4. How are the results from the evaluation instrument(s) interpreted?
   Answer: The student evaluation form addresses a number of critical delivery areas but the only answer that is used within our performance metric is Question #7. Question #7 is as follows:

   | On a scale of 1 – 7, please rate the degree to which any part of this training will be useful to you now or in the future. (circle one) |
   |---|---|---|---|---|---|
   | 1. | 2. | 3. | 4. | 5. | 6. | 7. |
   | Not useful at all | Useful | Very useful |

5. Who sees the results from your evaluation instrument(s)?
   Answer: Our results are tabulated and entered into a performance measurement template. At the end of each fiscal year, we tabulate the totals, assign them a percentage and report out to the Oregon legislature. Once accepted, they are posted on our website.

6. How costly (financial) are the evaluation instrument(s) to your organization?
   Answer: The cost for printing is virtually negligible. The cost for data collection and data entry is part of staff workload.

7. Please explain any positive or negative impacts your evaluation instrument(s) have had on your fire service related training programs.
   Answer: Results give us a “snapshot” in time of how the training was received. The downside to this way of collecting data is that we receive high marks the first time around but lower marks whenever we return for a refresher class. The upside is that each year produces a new crop of firefighters that have not experienced this training and the numbers tend to remain high. Overall, pretty positive feedback and a pretty good measuring device.
Oregon Department of Public Safety Standards & Training (DPSST)
Regional Fire Training Course Evaluation
(Students: Please complete and return to your Instructor)

Date: ____________________________

Class Title: _____________________________

Location: _________________ County: _________________

Instructor(s): ____________________________

Instructor(s)
A. Excellent B. Above Average C. Average D. Fair E. Needs Improvement*

1. Instructor knowledge of the topic A B C D E
2. Instructor responsiveness to student A B C D E
3. Instructor interest A B C D E
4. Instructor presentation A B C D E
5. Instructor use of visual aids A B C D E
6. Overall Instructor rating A B C D E

Would you recommend this class to others?
YES NO

Comments:

How could the instructor improve his / her style or technique?

How well were the class goals and objectives met?
Poorly 1 2 3 4 5 6 7 8 9 10 Very
Well

How would you rate the overall effectiveness of the class?
Poorly 1 2 3 4 5 6 7 8 9 10 Very
Well

How well did the exercises / activities help you to understand and apply the class material?
Poorly 1 2 3 4 5 6 7 8 9 10 Very
Well

On a scale of 1 – 7, please rate the degree to which any part of this training will be useful to you now or in the future. (circle one)

1. Not useful at all 2. Useful 3. Very useful

*Additional Comments:
SOUTH DAKOTA VALUATION QUESTIONNAIRE

1. What type of evaluation instrument(s) does your organization use to assess the effectiveness of fire service related training programs?

   Answer: We use an evaluation form with a basic questionnaire. Questions regarding course expectations, facilities, course relevancy, and audio visual materials are included on the questionnaire. There are also questions regarding the how recent the materials are and how it relates to the needs of the students. The questions are formatted in both open-ended format and in a five-point scale from unfavorable to favorable.

2. How are the evaluation instrument(s) distributed?

   Answer: Instructors distribute the evaluations at the end of the course offering.

3. How are the results from the evaluation instrument(s) gathered?

   Answer: Instructors gather the evaluations at the end of the course and mail them back to the State Fire Marshal’s Office.

4. How are the results from the evaluation instrument(s) interpreted?

   Answer: Our staff does not afford us the ability to track specific evaluation forms. Rather, our agency relies on word-of-mouth and informal feedback to track poor instructor performance.

5. Who sees the results from your evaluation instrument(s)?

   Answer: The questionnaires are submitted to my office at the South Dakota Fire Marshal’s Office for review.

6. How costly (financial) are the evaluation instrument(s) to your organization?

   Answer: The only costs are associated with printing the evaluation questionnaires.

7. Please explain any positive or negative impacts your evaluation instrument(s) have had on your fire service related training programs.

   Answer: I can’t believe I have seen any positive or negative impacts from our evaluation questionnaire. Our agency relies on annual instructor conferences to provide instructional professional development. The evaluation questionnaires are simply used to ensure instructors provide the required annual training for re-certification.
Fire Service Training
State of South Dakota
Department of Public Safety
State Fire Marshal's Office
118 W. Capitol
Pierre, SD 57501-2080

Instructor Evaluation Form

Instructor: ___________________________ Date: ___________________________
Course Name: ___________________________ Evaluator (optional): ___________________________

Instructor (1 = Unsatisfactory, 2 = Needs Work, 3 = Satisfactory, 4 = Very Good, 5 = Expert, N/A = Not Applicable)

<table>
<thead>
<tr>
<th>Presentation Skills</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Appearance well-groomed and demonstrated subject knowledge</td>
<td></td>
<td></td>
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<tr>
<td>2. Exhibited poise and confidence</td>
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<td>3. Effectively delivered (attitude, enthusiasm, voice, eye contact)</td>
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<td>4. Used media effectively (flipcharts, overheads, projector, etc.)</td>
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<td>5. Encouraged participation and questions</td>
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<tr>
<td>6. Listened effectively to participants</td>
<td></td>
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<tr>
<td>7. Handled disruptions in class</td>
<td></td>
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<tr>
<td>8. Used questioning effectively</td>
<td></td>
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<tr>
<td>9. Gave useful feedback (including answering questions)</td>
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</tr>
<tr>
<td>Format</td>
<td>10. Stated objectives and main points clearly at the beginning of each session</td>
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<tr>
<td></td>
<td>11. Covered main points adequately, enabling participants to meet objectives</td>
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<tr>
<td></td>
<td>12. Provided practical exercises, examples, applications, and illustrations</td>
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<td>13. Summarized main points at the end of each session</td>
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<td></td>
<td>14. Used time effectively; was concise and did not go off on tangents</td>
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<td></td>
<td>15. Explained how the material could be used (relevancy to the workplace)</td>
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<tr>
<td></td>
<td>16. Assessed participants' comprehension</td>
<td></td>
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<tr>
<td>Publicity, Registration, and Facility</td>
<td>17. The publicity received adequately described the course</td>
<td></td>
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<td>18. The registration process was effective</td>
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<td></td>
<td>19. The facility provided an excellent learning environment</td>
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<td>20. Overall satisfaction with the course</td>
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<td></td>
<td>21. OVERALL INSTRUCTOR EVALUATION</td>
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</table>

 Especially for ratings of 1 or 2 above, what would you suggest the instructor do to improve?

__________________________________________________________________________
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General comments about the instructor:

__________________________________________________________________________
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(Please write additional comments on the back of this form.)
WASHINGTON EVALUATION QUESTIONNAIRE

1. What type of evaluation instrument(s) does your organization use to assess the effectiveness of fire service related training programs?

Answer: We use a pencil and paper questionnaire for end-of-course evaluations for most training offered. However, we use different questionnaires for different programs. The questions on the questionnaire are specific for the type of class offered. For example, the marine fire course uses a different questionnaire than the general fire service questionnaire because the audience is different. We also have a separate instructor evaluation where students evaluate the instructor’s abilities, presentation and delivery.

Additionally, our recruit school uses a more detailed questionnaire that covers the training evaluation much more thoroughly. Our recruit school lasts for six months, so there is much more student feedback required than the standard end-of-course evaluation.

Finally, we use survey monkey to evaluate in-house training and to provide additional opportunities for students to complete an evaluation if they were unable to complete the pencil and paper evaluation.

2. How are the evaluation instrument(s) distributed?

Answer: We distribute the hand written questionnaires at the end of the course. We also use survey monkey as an electronic version of the evaluation form after the course is completed. The survey monkey provides feedback as to how the training went and what can be done to improve instruction. We are currently working on creating a long-term evaluation program to measure whether the training offered has helped the students with career advancement and job performance.

3. How are the results from the evaluation instrument(s) gathered?

Answer: The instructors submit the evaluations at the end of the course along with the instructor packet, room assignments, rosters, etc. The electronic evaluations are available in a summarized format from survey monkey as well.

4. How are the results from the evaluation instrument(s) interpreted?

Answer: The instructors review the evaluations and then someone from the fire marshal’s office reviews the evaluations. We look for consistent problems and identify trends of poor performance to make appropriate corrections.

5. Who sees the results from your evaluation instrument(s)?

Answer: I see the evaluations and the other deputy fire marshals on site at our State Fire Training Academy in North Bend, WA. Each deputy fire marshal manages specific programs and the evaluations from those programs go to the appropriate deputy fire marshal for review.
6. How costly (financial) are the evaluation instrument(s) to your organization?

Answer: We have never done a cost-benefit analysis so we have never tracked the costs of the evaluation instruments.

7. Please explain any positive or negative impacts your evaluation instrument(s) have had on your fire service related training programs.

Answer: We frequently use our evaluations to substantiate the need for new or improved housing requirements. We previously used single wide mobile home trailers for housing. We recently updated and built a new dormitory for students during their campus stay as a result from the student feedback on their evaluations. We have also changed the caterer’s menu based on student feedback. We have also changed and improved training props based on student feedback.

We take the student feedback very seriously and make sure to take steps to improve any problems. The students are very good about letting us know how about the quality of their training experience and they also are very good at making suggestions for change.
This critique is an important tool used by the Fire Training Academy to assess our ability to provide consistent high quality fire training. Your comments are vitally needed to assist us in this endeavor. Please take the time to complete this survey and help maintain the quality of training you deserve.

Grade the following information by placing an "X" in the appropriate box.

**Classroom Presentations**

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
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</thead>
<tbody>
<tr>
<td>a. Did the presentation contain useful activities to help understand information or subject?</td>
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<tr>
<td>b. Did the presentation meet class objectives for topic?</td>
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<tr>
<td>c. Did the lecture contribute to your knowledge or firefighting skills?</td>
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</table>

If "no", please explain:

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Grade the following information by using the scale and placing an "X" in the appropriate box.

**Training Ground Activities**

<table>
<thead>
<tr>
<th>Low</th>
<th>High</th>
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<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>a. How helpful were the instructors in learning the necessary skill?</td>
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<td>b. What level was safety a primary concern at all times?</td>
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<td>c. How clear and understandable were the instructor's directions?</td>
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<td>d. Evaluate if rehabilitation was established and adequate breaks given.</td>
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Please explain:

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### Training

1. Did training props assist in learning skills?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
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If "no", please explain:

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### Training (continued)

2. Which props would you like to see changed?
   Please explain:

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3. What additional props would you like to see at the Academy?
   Please explain:

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4. Did reading assignments and texts prepare you for weekly exams?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
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Please explain:

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</table>

5. Did reading assignments and texts prepare you for State Firefighter 1 and Hazardous Materials Operations exams?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
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</table>

Please explain:

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</tbody>
</table>
EVALUATING THE EFFECTIVENESS OF FIRE TRAINING

Please explain:

<table>
<thead>
<tr>
<th>Food Service</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
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<td>3</td>
<td>4</td>
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<td>5</td>
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</tbody>
</table>

**Physical Fitness**

a. Did the physical fitness/wellness program meet your needs?

b. Was the equipment provided adequate for your fitness program?

c. Do you feel your overall condition improved?

d. How would you rate the overall fitness program?

Please explain and what changes do you recommend for the "Wellness & Fitness" program?

<table>
<thead>
<tr>
<th>Company Officers</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
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<td>3</td>
<td>4</td>
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<tr>
<td></td>
<td>5</td>
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</tbody>
</table>
Instructors
a. Related the material to class needs.
b. knew the subject matter thoroughly.
c. Answered questions completely.
d. Used course text and materials effectively.
e. Stimulated interest in the subject matter.
f. Encouraged Student participation and questioning

g. Checked for student comprehension

h. After issues were identified with an instructor were improvements noted?
If "no" or otherwise, please explain:

Please explain:

Facility

Training Props
Please explain:

________________________________________________________________________
________________________________________________________________________
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Lodging

<table>
<thead>
<tr>
<th>Low</th>
<th>High</th>
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<td>1</td>
<td>2</td>
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<td>3</td>
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</table>

Please explain:
________________________________________________________________________
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Your Overall Impression of the Recruit School Program (please explain)
1. Do you feel that the training programs helped you to improve your skills and knowledge base?
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

2. Did you learn new techniques that will assist you to operate more effectively and safely at a fire scene?
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

3. How well were you kept informed of your progress throughout the entire 12 weeks of training?
________________________________________________________________________
________________________________________________________________________
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________________________________________________________________________
4. What will you remember most about your training?

General Comments

______________________________
______________________________
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______________________________
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Appendix I – Evaluation Form Questions

(Note: questions are adapted from Guskey’s Evaluating Professional Development)

Content Questions: (Content questions address the relevance, utility and timeliness of the topics explored through the professional development experience).
- Were the issues explored relevant to your professional responsibilities?
- Did you have adequate opportunities to explore the theory and supporting research?
- Did the content make sense to you?
- Did the topic address an important need?
- Was the material you reviewed difficult to understand?
- Did the content relate to your situation?
- Was your time well spent?
- Was your understanding of this topic enhanced?
- Will what you learned be useful to you?
- Will you be able to apply what you learned?

Process Questions: (Process questions relate to the conduct and organization of the professional development experience).
- Was the leader knowledgeable and helpful?
- Did the instructional techniques used facilitate your learning?
- Was the leader or group facilitator well prepared?
- Was the session leader credible?
- Did the materials used enhance your learning?
- Were the activities in which you engaged carefully planned and well organized?
- Were the goals and objectives clearly specified when you began?
- Were new practices modeled and thoroughly explained?
- Did you use your time efficiently and effectively?
- Did you have access to all necessary materials and resources?
- Did you experience include a variety of learning activities?
- Were the activities relevant to the topic?
- Was sufficient time provided for the completion of tasks?

Context Questions: (Context questions generally relate to the setting of the professional development experience).
- Were the facilities conducive to learning?
- Was the room the right size for the group?
- Were the accommodations appropriate for the activities involved?
- Was the room the right temperature?
- Was the lighting adequate?
- Were the chairs comfortable?
- Was the coffee hot and ready on time?
- Were the refreshments fresh and tasty?
- Was the variety of refreshments adequate?
Evaluation of organizational support:
- What organizational policies relate directly to this program or activity?
- Are the program or activity’s goals aligned with the organizational mission?
- Are any organizational policies in conflict with program or activity goals?
- What organization policies are directly or indirectly affected by this program?
- How did the program or activity alter organizational procedure?

Organizational support questions for the teacher:
- Was relevant information available to you during planning and implementation?
- Were resources provided in a timely manner?
- Were problems addressed quickly and efficiently?
- Was access to expertise available when problems arose?
- Were the facilities necessary for implementation made available?
- Did the physical conditions of the classroom affect implementation efforts?
- Was a comfortable space available for meeting with colleagues?
- Did you have access to the necessary technology?
- Was the technology available to you adequate and up-to-date?
- Did the technology operate efficiently?
- Were instructors involved in the program freed of other extra duties?
- Did you have a quiet place to plan and discuss important issues?
- Was time for collaborative planning uninterrupted?
- Were commitments to planning time honored?
- Did scheduled meetings begin on time?
- Were instructors called away from planning meetings to attend other unrelated matters?
- Were you encouraged to try new practices or strategies?
- Are school leaders generally open to suggestions for improvement in school policies or practices?
- Are new ideas welcomed and supported?
- Do you worry about being criticized if positive results are not readily apparent?
- Does the emphasis on success discourage you from trying new approaches?
- Do personnel evaluation procedures interfere with attempts to implement change?
- Are your colleagues active learners?
- Do other instructors show up on time for professional development sessions and activities?
- Do you colleagues share your enthusiasm for experimenting with new techniques?
- Are you encouraged by colleagues to learn about new ideas and strategies?
- Do you colleagues support your efforts to make improvements?
- Are your efforts to improve belittled by certain colleagues?
- Do you have opportunities to visit the classrooms of colleagues and observe their teaching?
- Do colleagues observe your teaching and discuss ideas and strategies with you?
- Are you colleagues enthusiastic about opportunities to plan collaboratively?
- Do your colleagues frequently engage in conversations about ways to improve?
- Do colleagues often ask you about your results with students?
Organizational Support – Supervisor Questions
• Is the supervisor an active and enthusiastic learner?
• Does the supervisor encourage others to learn and participate in new programs and activities?
• Is the supervisor an attentive supervisor in professional development activities?
• Does the supervisor regularly review information on student learning progress?
• Does the supervisor encourage involvement in division-wide decision making?
• Is the supervisor open to new ideas and suggestions?
• Does the supervisor work with instructors to improve instructional practices?
• Are instructors encouraged by the supervisor to plan collaboratively?
• Does the supervisor encourage peer coaching and mentoring relationships?
• Are instructors’ perspectives honored and valued by the supervisor?
• Does the supervisor facilitate regular follow-up sessions and activities?
• Are the results of new strategies shared by the supervisor with all staff members?

Organizational Support – Agency Administrator Questions
• Are all division managers involved in planning activities?
• Does the agency administrator actively support the improvement efforts?
• When invited does the agency administrator take part in program activities?
• Did the agency administrator meet request for information, supplies, or other resources in a timely manner?
• Were division managers kept apprised of progress and results?
• Did the agency administrator support and help coordinate follow-up activities?
• Did the agency administrator share results with other staff members?
• Did the agency administrator recognize outcome objectives and achievements of staff members?
Table 1 – Sample Logic Model Table

LOGIC MODEL TABLE

<table>
<thead>
<tr>
<th>Resources</th>
<th>Activities</th>
<th>Outputs for Customers</th>
<th>Short-Term Outcomes</th>
<th>Intermediate Outcomes</th>
<th>Long-Term Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional trainers</td>
<td>Provide instructor professional development</td>
<td>• Offer local traditional classroom courses</td>
<td>Students learn new skills &amp; knowledge about firefighting</td>
<td>Students appropriately apply new skills and knowledge on the fire ground</td>
<td>• Improve firefighter proficiency</td>
</tr>
<tr>
<td></td>
<td>• College education</td>
<td>• Offer regional training academies</td>
<td></td>
<td></td>
<td>• Reduce firefighter fatalities and injuries</td>
</tr>
<tr>
<td></td>
<td>• Attend National Fire Academy</td>
<td></td>
<td></td>
<td></td>
<td>• Reduce civilian fire related fatalities and injuries</td>
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<tr>
<td></td>
<td>• Attend train the trainer courses</td>
<td></td>
<td></td>
<td></td>
<td>• Reduce impact of fire on the communities</td>
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<tr>
<td></td>
<td>• Attend national conferences, workshops and symposiums</td>
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<td></td>
<td>• Professional organization affiliations</td>
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</tr>
<tr>
<td>Training budget</td>
<td>Provide instructor professional development</td>
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<td></td>
</tr>
<tr>
<td>Support materials</td>
<td>Develop technology</td>
<td>• Offer online fire courses</td>
<td>Students learn new skills &amp; knowledge about firefighting</td>
<td>Students appropriately apply new skills and knowledge on the fire ground</td>
<td>• Improve firefighter proficiency</td>
</tr>
<tr>
<td>Classroom space</td>
<td>• Server space</td>
<td></td>
<td></td>
<td></td>
<td>• Reduce firefighter fatalities and injuries</td>
</tr>
<tr>
<td>Practical facilities</td>
<td>• Web site development</td>
<td></td>
<td></td>
<td></td>
<td>• Reduce civilian fire related fatalities and injuries</td>
</tr>
<tr>
<td></td>
<td>• Online learning management system train the trainer</td>
<td></td>
<td></td>
<td></td>
<td>• Reduce impact of fire on the communities</td>
</tr>
<tr>
<td>Certification committee</td>
<td>Develop training standards</td>
<td>• Pro-board accreditation</td>
<td>Students learn new skills &amp; knowledge about firefighting</td>
<td>Students appropriately apply new skills and knowledge on the fire ground</td>
<td>• Improve firefighter proficiency</td>
</tr>
<tr>
<td></td>
<td>• Utilize valid and reliable test banks</td>
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<td>• Reduce firefighter fatalities and injuries</td>
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<tr>
<td></td>
<td>• Evaluate manipulative skills objectives</td>
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<td></td>
<td>• Reduce civilian fire related fatalities and injuries</td>
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<tr>
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<td></td>
<td></td>
<td>• Reduce impact of fire on the communities</td>
</tr>
</tbody>
</table>

External context: geographical coverage distance, disparate volunteer/combination/career fire departments, volunteer firefighter schedule requirements,