Effective Training for Adult Learners

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Introduction

Training costs are significant in any business. Measuring the effectiveness of training consumes valuable time and resources. Why should you evaluate your training programs?

- To obtain and analyze feedback from learners/customers, e.g., their level of engagement or motivation about the training experience, content areas that were missing or environmental issues such as background noise that were disruptive;

- To select the best trainers and training strategies, e.g., instructor-led, computer-based, or blended;

- To clarify training expectations for employees;

- To identify gaps in knowledge, skills or attitude, e.g., whether learners were able to identify multiple energy sources and demonstrate skills to conduct Lockout/Tagout (LO/TO) at the end of training;

- To identify whether observable behavior changes were transferred to the workplace, e.g., whether qualified electricians were able to perform LO/TO in the workplace 30 days after training or whether they could use an energized work permit on the job;

- To provide an opportunity for management to assess employee development; and

- To justify and expand training budgets.

Evaluation allows you to further improve effective training programs and eliminate ineffective ones. Effective training implies an ability to connect employee training results to the business' bottom line or return on investment.

What metrics do you provide to your supervision to demonstrate training effectiveness?

- The number of learners

- The number of courses offered, especially those that meet regulatory compliance

- The number of training hours provided

- The number of learners who submitted Level 1 "smile sheets" with high ratings?

- The number of learners who successfully passed Level 2 written or demonstration tests?

Do you end prematurely at Level 2 evaluation?

Do you use multiple levels of evaluation?

Kirkpatrick's Four Levels of Evaluation

In 1959, Dr. Donald L. Kirkpatrick identified four different levels of training evaluations, as follows:

Level 1 – Reaction of the learner regarding the content, trainer and medium.

Level 2 – Learning – Change in knowledge, skills or attitude at the end of training.

Level 3 – Behavior Change – Transfer of knowledge, skills or attitude to the workplace.

Level 4 – Business Results such as return on investment, increased profits, reduced absenteeism and turnover.

In the current economic downturn, training is on trial (Kirkpatrick) and we are being asked to do more with less as our training budgets shrink. Do you begin with a Training Needs Assessment (TNA)? Kirkpatrick suggests that we begin with a BNA – Business Needs Assessment, not a TNA. He, like Steven Covey, suggests that we "Begin with the end in mind." Phillips and Stone (61) provide a checklist for outcome and baseline data with the following questions: "What do you (the client) want to change? What direct and indirect measures reflect the change? If baseline data is available, does it match the population being trained (can it be traced exactly to the trained population without contamination?" Kirkpatrick, JD and Kirkpatrick, WK (136) note that "the cornerstone question that converts generic stakeholder expectations to observable, measurable success outcomes is 'What will success look like to our business partners'", e.g., increased daily inspections, decreased worker's compensation costs or decreased EMR (Experience Modification Rate), decreased DART rates (days away, restricted or transferred) or increased product recovery. Once you identify the outcome sought by your business partners, trainers can identify what evidence or data they will collect at each level of evaluation to demonstrate value to the client.

Level 1 – Reaction

Level 1 measures the reaction of the learner. Level 1 evaluations are often referred to as "smile sheets" since they tell the trainer how learners felt about the training experience. Level 1 evaluations do not measure any learning that takes place. Unfortunately, because reactions are so

easy to measure, it is not surprising that a recent American Society for Training and Development (ASTD 2009) study showed that 50% of the companies surveyed misused their limited resources on Level 1 evaluations (Kirkpatrick).

Since Level 1 evaluations are lagging indicators, they do nothing to change the immediate learning experience. Consider using formative methods such as frequent check-ins during the training program. Controllable factors like learning pace or temperature control can be changed immediately to enhance the learning experience. Consider what happens when you schedule training on the 11th hour of an employee's work shift. Is that the type of reaction (exhaustion and frustration) that you want to begin your learning session with? Consider what happens when you order brain boosters with dopamine for snacks instead of brain busters. Consider priming participants and supervisors with a pre-course prep kit. Consider using a variety of instructional methods that appeal to multiple intelligences in a diverse population.

Level 2 – Learning

Level 2 measures learning, but it is the most difficult level to evaluate due to issues regarding test validity and reliability. Learning involves a change in knowledge, skills and/or attitude. Where does Level 2 begin? Consider asking employees what knowledge and/or skills they need to do their jobs better. Consider asking supervisors the same question. Build a business partnership so that training is not the sole responsibility of the training department, but rather a team of employees who are invested in the outcome.

Written tests are generally used to evaluate an increase in knowledge whereas demonstration tests are typically used to evaluate a change in skills. Involve supervision in the demonstration or performance test. Often we provide pre-course and post-course tests (the same test) to determine the change in learning. Tests help determine final grades or make promotion decisions, but they can be difficult ones. For example:

- If a learner scores 42% on the written test, is that passing?

- How many chances does a learner get to re-test?

- How many versions of the test do you have?

- If a learner taking a test, e.g., permit-required confined space, is illiterate and cannot read Material Safety Data Sheets, labels, permits or limitations of safety equipment, is that passing?

Many people regard multiple-choice evaluations as the most flexible and most effective of the objective item type tests. Consider the questions used for safety and industrial hygiene certification examinations. Multiple choice tests are easy to grade, but they are very difficult to write. Multiple choice items consist of two parts: (1) the stem, which presents a specific problem to the test taker; and (2) a list of possible solutions or answers called distracters. The stem should state the problem and all qualifications. To make sure that the stem presents a problem, you should include a verb in the statement. Typically there is one correct or best answer offered among three or four distracters or options.

Few safety trainers have Instructional Design degrees, but it would be wise to learn how to avoid pitfalls when preparing written evaluations. For example, avoid questions with:

- Trivia which is "nice to know" instead of focusing on the necessary learning objectives;

- Grammatical cues – one or more options that don't follow grammatically from the stem;

- Absolute terms - use of words such as "always" and "never";

- Vague frequency terms - use of words such as "rarely", "usually", "frequently" or "often";
- Hinging – creating questions where students must know the answer to one question in order to answer other questions;

- Negative stems, e.g., "All of the following are true EXCEPT";

- Long stems – stems should be as short as possible without repeating the same information in options;

- Complicated or tricky stems – many words which can be written in more concise language;

- Complicated or tricky options – use of those dreaded "multiple multiples";

- Numeric data options stated inconsistently or overlapping – mixing of ranges and percentages;

- Unclear options – use of acronyms, abbreviations or symbols ($<, >, \approx$);

- Long, correct options – correct answer is longer, more specific, or more complete than other options;

- Illogical order of options, e.g., not using alphabetical order or increasing order for numerical data; and

- "None of the above" or "all of the above" option.

When the Flesch-Kincaid score (readability or grade level) matches the grade level of the audience, you improve readability of written evaluations. When students are allowed to use the notes, books and reference materials that they will have available in the workplace, you reduce test anxiety and improve the learning experience. Recall that an increase in tension reduces retention. The written test should not be a stressful memory test, but rather a problem-solving one.

Learning is likely to transfer only if the conditions in the workplace are favorable for transfer. Demonstrating that learning has occurred helps trainers to promote their programs. Knowledge of the Level 2 evaluation helps in interpreting the results of Level 3 evaluations. For example, if Level 3 results are poor, it may be because of workplace factors and not because of any problem with the trainer, the training program or the training department.

Level 3 – Behavior

Level 3 measures whether the performance or behavior of the learner has changed as a result of the learner applying the training content after returning to the job. It is the most important level for trainers who focus their efforts on Level 3 behaviors when writing learning objectives. Learning objectives describe the behavior change expected from the learner after training. Learning objectives should be SMART – specific, measurable, action-oriented, relevant and timely. Examples of appropriate action verbs for learning objectives can be found in Russell 219. Phillips and Stone (40) identify 3 components of learning objectives:

1. Performance – What the learner will be able to do at the end of training;

2. Condition – Circumstances under which the learner will perform the job; and

3. Criteria – Degree or level of proficiency that is necessary to perform the job.

Level 3 evaluations should be done at appropriate times. Consider that it takes 21 days to establish a new work habit, e.g., wearing a seat belt or a fall protection harness and lanyard. Management must support the formation of the new behavior by reviewing, rehearsing, repeating and reinforcing it over and over again until it becomes a habit. Once again, consider using the same Level 3 evaluations before and after training.

Level 3 evaluations include the following types (Kirkpatrick DL and Kirkpatrick JD):

1. Surveys and questionnaires – Likert scale and open-ended questions that can be asked of anyone who observes the behavior of employees on the job;

2. Observation and checklists – Written observations of the employee performing on the job or a table of behaviors listed on a checklist. Consider using a control group wherein a comparison is made in the behavior of the control group to the behavior of the trained group;

3. Work review – Review of actual work that has been completed by the trainees on the job without actually observing them doing it; and

4. Interviews and focus groups – Structured questions that can be administered to either individuals (interview) or groups (focus groups) to query to what degree new behaviors are being applied on the job. Follow-up questions to action plans are an excellent way to administer this.

Surveys and questionnaires tend to provide more data while interviews and focus groups tend to provide richer information.

Learning is likely to transfer to a behavioral change in the workplace only if the conditions in the work setting are favorable for transfer. For example, the organizational culture and climate must understand and support the change. If the supervisor did not attend training, he/she may not understand the new knowledge, e.g., respirator cartridge selection. The supervisor must support and/or facilitate the learner's new behaviors through direct extrinsic rewards such as mentoring, encouragement, praise, increased freedom and responsibility, pay increases and recognition. Similarly, the supervisor must address inappropriate behaviors through a well-established mentoring and progressive discipline policy.

Level 4 – Results

Level 4 measures results, i.e., to what degree targeted outcomes occur, as a result of the training program and subsequent reinforcement. It is not surprising that CEOs are most concerned with Level 4 results. There is a lot of Level 4 data in our businesses. But this data is challenging for trainers to evaluate since we are trying to establish firm evidence that the training program was the key or only source that produced Level 4 results. Time must elapse after the training program in order for these outcomes to occur:

- Reduction in injury, illness or DART rates;
- Increase in near-miss reporting;
- Increase in completion of Job Safety Analyses (JSAs);
- Reduction in property damage;
- Reduction in spills or environmental releases;
- Decrease in greenhouse gas emissions; and
- Increase in pounds of material recycled.

In addition, other factors occur during that time period and it is often difficult to isolate the effect of the training program. Level 4 outcomes are more removed or indirect outcomes compared to the outcomes of Levels 1, 2 and 3.

Effective Training

OSHA's pamphlet on training (OSHA 7) states that an "Effective training program allows employees to participate in the training process and to practice their skills or knowledge. This will help to ensure that they are learning the required knowledge or skills and permit correction if necessary." Trainers must present the training program in a way that enables learners to follow these 3 "P's"(Participating, Practicing and Permitting Correction) and do so in a manner in which learners react favorably to the training (Level 1). It is unfortunate that many trainers erroneously conclude that their responsibilities end with Level 2 evaluation.

Kirkpatrick, JD and Kirkpatrick, WK (84) define training effectiveness as "the degree to which we help to accomplish the objectives set forth by and negotiated with our key business stakeholders". But make no mistake. There is a great divide between Levels 1 and 2 which are under the direct control of the trainer compared to Levels 3 and 4 which are controlled by

management. In fact, an ASTD study conducted in 2006 showed that the most significant cause of training failure (70%) was due to a lack of management support and accountability or opportunity to use what was learned in training soon enough on the job for the learning and behaviors to stick. Consider emergency response programs like Self-Contained Breathing Apparatus (SCBAs) if employees never practice donning/doffing the respirator except during annual training. Evaluation at Levels 3 and 4 is problematic for trainers since they lack the authority to direct employee performance out in the workplace! Consider working with business partners early on to develop personal action plans to document how employee training contributed to the bottom line.

Your Personal Action Plan – Levels 1, 2 and 3 Evaluation

1. You can't manage what you don't measure. Review your next training program in light of **the most valuable level of training evaluation – Level 3**. Spend lots of time preparing and conducting a Level 3 evaluation that can be used before and after training. Was there a change in learning that translated into a visible change in workplace behavior?

2. Google "How to Write Multiple Choice Items" and spend some time improving written tests that you develop for Level 2.

3. Spend the least amount of time reading and learning about Accelerated Learning principles (Meier, Rose, Rose and Nicholl). Identify five principles that you can incorporate into your training program to improve the learning experience. Hint: What type of music serenades the brain?

Quotes Worth Remembering

Henry Ford: "The only thing worse than training your employees and having them leave is NOT training them and having them stay."

Kirkpatrick, J.D. and Kirkpatrick, W.K. (97-98): "Training events in and of themselves provide little hope to deliver positive, bottom line outcomes. Much has to happen before and after formal training in order to leverage actual learning. And learning professionals need help to do it. Our domain is Levels 1 and 2, which is one of the major reasons we spend almost all of our time there. But the actual leverage and execution of learning efforts and overall corporate strategy primarily occur at Level 3."

Acknowledgement

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"I don't know what your destiny will be, but one thing I do know; the only ones among you who will be really happy are those who have sought and found how to <u>serve</u>."

--Albert Schweitzer 1875-1965

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