

Measuring Training Effectiveness

How to Measure Employee Learning in Ways that Improve ROI and Results

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How to Measure Employee Learning in Ways that Improve ROI and Results

The benefits of employee training are easy to understand:

Improved skills and productivity, greater retention, and an even better employer brand. But actual value can sometimes be hard to quantify. With U.S. corporate spending on employee education continuing to grow by 15 percent per year to more than \$70 billion,¹ businesses need reliable metrics and methods to measure their training ROI.

This whitepaper explains the proven methods of measuring training effectiveness — and the challenges to doing so. You'll learn specific metrics for planning, monitoring, and reporting on the tangible and intangible results of your training programs.

Converting training results into dollar values helps to make necessary adjustments in course spending, evaluate training vendors you may use, and also build a credible business case for future learning and development funding. These measurement tips will reduce wasted learning and ensure your employees can apply what they learn to their job.

Why Measuring is Important

Everyone agrees that employee training is good. However, when learning occurs on company time and the company time, there needs to be some measurement to show that the knowledge or skills gained are being applied to improve job functions (or other goals) and justify the expense.



What is Scrap Learning?

A term coined by Knowledge Advisors, scrap learning is training that was delivered but unsuccessfully applied, and therefore, wasted.



Executives prefer to see hard ROI numbers, like those related to cost savings and revenue increases. “But there is one metric that does resonate with most executives,” says David Mear of Mandel.com. “Executives get the idea of waste.”²

“Training is expensive if it does not serve the purpose for what it was given.”

—Ishwar Dayal

Indian Journal of Industrial Relations¹⁷

In a 2010 study of learners at companies with more than 5,000 employees, Robert O. Brinkerhoff, Ed.D., Professor Emeritus at Western Michigan University, found that as few as 9 percent of trained employees actually applied what they’ve learned to their job to achieve positive results. The remaining 91 percent received what is known as “scrap learning.”³

Extrapolating these findings, Brinkerhoff estimates that “seventy-six percent of corporate learners apply 50 percent or less of what they learn, which means the scrap learning rate is 50 percent or higher among more than three-quarters of all companies.”³

“The scrap learning rate is 50 percent or higher among more than three-quarters of all companies.”

—Robert O. Brinkerhoff, Ed.D., Professor Emeritus

Western Michigan University³

To help quantify the costs of scrap learning, the Association for Talent Development’s 2015 State of the Industry Report places the average per employee training expenditure at \$1,229 and the average number of training hours consumed per employee at 32.4 hours.⁶



Did You Know?

Seventy-five percent of companies waste more than \$614 and 15.1 hours per employee on training that will never be put to use, according to Brinkerhoff’s estimates.

Even though it's impossible to eliminate waste from employee learning programs, if you can measure it, you can fix it. "Many training programs fail to deliver the expected organizational benefits," as Leslie Allan of the Australian Institute of Training and Development notes. "Having a well-structured measuring system in place can help you determine where the problem lies."⁴

In a recent *Training Industry Magazine* article authored by Corporate Executive Board (CEB) senior measurement consultant, John Mattox, II, Ph.D., demonstrated how lowering your company's scrap learning rate strongly correlates with increased job performance.⁵

Mattox found that most organizations that actively measure scrap learning see average annual employee performance gains due to learning of 10 percent-compared to 6 percent for those that don't measure. According to the study, the top quarter of organizations that measure scrap see performance gains that more than triple those of the typical organization.⁵

Learn What You Want to Measure

As important as gauging training effectiveness may be, it's important to know exactly what you want to measure. "Many managers leap to delivering performance metrics forgetting why they are delivering training in the first place," warns Samudra Neelam Bhuyan of sales consulting firm Mindtickle.com.

"Don't fall into the trap of reporting metrics just for the sake of reporting."⁷

—Samudra Neelam Buyan
Mindtickle.com



Did You Know?

To be most effective, learning programs must evolve over time. The data you gain from measuring results improves not only your employees' abilities, but also your organization's ability to improve future training plans and ROI.

The trouble with most training evaluation methods is that they typically ignore data about likely business impacts. Instead, they focus on completion rates, or participants' reactions to the quality of the course itself, the support materials, the instructor, and even the facilities where the trainings are held.⁶ These metrics, however, do little to assess if the employee gained proficiency or the ability to apply what was learned to the job.

To establish ROI, you really just need to focus on two things: training results and training costs.

1. Establishing Results

The first step in considering or designing any training program is to define your goals. Be as specific as possible about the objectives of your training period. Employee training differs from the traditional education that most students are used to because it is targeted to acquire specific skills you want.

If you're not taking advantage of training's ability to focus on your company's or at least the department's specific goals, you're squandering your employees' time—and your training investment—on learning that won't be useful, applied, or retained.

“Decide prior to the training what metrics will matter after the training is conducted. You can then think about what type of measurement is appropriate for the business need you are trying to solve.”⁹

—Andrea D. Cranfill

The co-founder and principal of FlashPoint, a talent management consulting firm

In his book, *Telling Training's Story: Evaluation Made Simple, Credible, and Effective*, Robert Brinkerhoff says that 90 percent of training resources are devoted to the design, development and delivery of training, yet only 15 percent of what is learned actually transfers to the job.¹⁰

Determining your goals will help you choose the best courses and training program, manage executives' and participants' expectations, and even reduce scrap learning. Explicit goals will also greatly simplify the way you measure your results.

To keep things simple, possible factors to measure should include numbers or key performance indicators (KPIs) your company already tracks, including:

- › Scores on post-training tests
- › Certifications achieved from external organizations
- › Completed projects applied from learning
- › Sales/revenue figures
- › Number and quality of marketing leads
- › Problem incidents (like cybersecurity breaches)
- › Product time-to-market
- › Error rates and rework required
- › Customer service scores
- › Employee retention/attrition rates

2. Determining training costs

Total investment is the other critical element to determine your training ROI. But establishing training costs can be challenging just on its own. Samudra Neelam Bhuyan recommends the following considerations for analyzing training costs:⁷

- › Development costs—L&D salaries, overhead
- › Implementation costs—training material, course cost, technology costs, facilities rental, travel/hotel costs, instructors' pay
- › Compensation for participants—the salaries and benefits costs that will be dedicated to the time spent on training
- › Lost productivity during training—the cost of time spent not working
- › Learning curve cost—the cost of time needed for your employees to adapt to new practices and ways of working after the training program
- › Company culture shift (change management)—cost of incentives provided to foster wanted behavior after training

Preparing for Success

Once organizations understand their training goals, managers can do a lot to maximize learning success by meeting with employees before training begins.

“These managerial actions help to ensure that training is valuable to the learner and is fully aligned with business goals,” notes John Mattox, II, Ph.D., in CIO Magazine. “The conversation and expectation-setting prepares the learner for the actual training event.”³

For training in some disciplines, such as digital marketing, pre-assessment can provide valuable benchmarks. For example, learners taking Simplilearn’s Digital Marketing courses can begin with a convenient online OMCA exam practice assessment quiz, created and administered by the Online Marketing Certified Professionals (OMCP) Standards Committee. Participants answer about 20 questions in under 40 minutes, covering SEO, digital advertising (PPC), social media, conversion rate optimization, web analytics, content marketing, mobile marketing, and email marketing.

The OMCP pre-assessment does more than provide companies with an unbiased, often sobering snapshot of their marketing team’s actual skill levels beforehand, It provides a definitive tool to measure training results both before and immediately after the training. It can even be administered months later to gauge retention and perhaps point out future remedial or refresher training needs.

Such benchmarks provide a critical metric for measuring success of the training when compared to post-course assessments. Pre-assessment also enables companies to customize their courses to the most needed skills, as well as stage individual employees at appropriate start levels. The result is a training program that reduces wasted learning cost and effort, while better enabling all participants to come up to the same level regardless of their starting points.

Methods for Measurement

There are a variety of ways that learning experts and corporations evaluate the results of employee training. These include quizzes, one-on-one conversations, employee surveys, participant case studies, and official certification exams. The best solution for your business may be a combination of elements from any or all of these approaches.

The Kirkpatrick Evaluation Model

During the 1950s, University of Wisconsin Professor Donald Kirkpatrick developed the Kirkpatrick Evaluation Model for evaluating training. To this day, it remains the most recognized method of evaluating the effectiveness of training programs. A simple approach, it suggests four-levels of key pre-and post-training assessments. Higher levels add precision to training results measurement, but also take more time to analyze and can be more costly.

Level 1 - Reaction. Survey or talk to your employees before and after the course to get their opinions of the learning experience. Ask them what they learned. Ask if they feel/felt the training was valuable, engaging, and relevant. Evaluation types can include:

- › Surveys or brief questionnaires
- › Informal conversations or short interviews with participants
- › Focus group sessions with all participants together at once

Level 2 - Learning. Measure how well the participants acquired the intended knowledge and skills as a result of the training. This can be done by comparing pre-and post-training evaluations, or only as a post-evaluation. Measurements can include:

- › Pre- and post-test scores
- › Successful completion of practical applied learning projects
- › Actual job performance KPIs
- › Supervisors' reports
- › Achieving certification

Level 3 - Behavior. Measure how much participants' behaviors changed (whether they've absorbed what they learned and/or applied it to their job). This involves both pre-and post-training measurement of the learner's behavior. It's important to note that behavior results may either reflect the effectiveness of the course or employees' acceptance/reluctance to change their behavior. Behaviors can be measured by:

- › Participant self-assessment questionnaires
- › Interviews, surveys, or informal feedback from coworkers or managers

- › Focus groups
- › Direct on-the-job observation
- › Actual job performance KPIs
- › Customer surveys, comments, or complaints

Level 4 - Results. Measure the tangible results of the training such as: reduced cost, improved quality, faster project completion, increased productivity, employee retention, better marketing leads, increased sales, and higher morale. This requires both pre-and post-training measurement of the training objectives. Possible metrics include:

- › Financial reports
- › Marketing, sales, or other KPIs
- › Quality or safety reports or inspections
- › Interviews with managers
- › Retention reports and employer rating reviews
- › Achieving certification

“Before you get started with level four measurement, it is important to already have established a system for management and reporting employee performance over time.”⁷

—Samudra Neelam Bhuyan
Mindtickle.com

How Much Measurement Makes Sense?

Depending on the training course and the data you find useful, it may not be necessary to measure everything, every time. Because it becomes increasingly difficult and costly to conduct evaluations as you move up the Kirkpatrick scale, Leslie Allan suggests adding levels as follows, according to type of training and your goals:⁴

- › Level 1 (Reaction) for all programs
- › Level 2 (Learning) for “hard-skills” programs only

- › Level 3 (Behavior) for strategic programs only
- › Level 4 (Results) for programs costing over \$50,000

Advisors at TheTrainingWorld.com note, “One issue regarding training evaluation is that it’s expensive to do it properly, which is why most companies don’t really do it well.”²⁰ Therefore, when deciding how much costly analysis to put into measuring your training program, understand that taking a bargain basement approach can seriously undermine the accuracy of your results.

Surveying Your Surveys

Whether you utilize the Kirkpatrick model or something less formal, surveys are excellent for assessments, especially since they can be created, delivered, managed, and reported online, with automated score calculations and data graphing.

Open-ended survey questions are also useful for collecting results that are hard to quantify, like expectations, satisfaction, and other attitudes.

Keep your surveys simple. Instead of a 1-10 rating scale, use a 1-5 scale (also called a 5-level Likert scale) in which the descriptions are widely distinctive. For example:



When using the 1-5 scale, “Always use it with 5 being the positive end and 1 being the negative end,” advises Dr. Rob Balon, CEO of the Benchmark Company. “NEVER use 1 as the positive end.”¹¹

Yes-and-no questions (and other dichotomous or multiple choice answers) are excellent for finding precise data, but they lack the ability to provide more descriptive assessment of attitudes. For this reason, it’s helpful to include a comment box after each answer. This lets respondents offer more thorough information about their reactions, while still providing a definitive, quantifiable metric. In the end, you may find the nuances of their answers more valuable than the statistics.

A good training provider can provide you with learning assessment tools, including customizable surveys, subject matter quizzes, practice exams, and other means to measure learning success and help quantify ROI.

Beware of Outcomes with Misleading Origins

You need to be cautious not to misattribute training as the sole source of certain performance improvements or effects. One of the most tempting logical fallacies about causality is post hoc, ergo propter hoc, or “after this, therefore because of this.” Just because action A occurs earlier in time than some particular effect B, you should not assume that A caused B. You need to look deeper.

“Perhaps the biggest issue has to do with showing a strong causal link between training and job performance,” notes TheTrainingWorld.com. “The only way to do that properly is to have a control group that doesn’t receive training, and an experimental group that does, then compare them in terms of performance. Most companies are not interested in doing that.”²¹

“Most organizations experience change in a variety of ways and the rate and pace of those changes can influence behaviors and results as much, if not more, than the training itself. The implementation of a new, more user-friendly website may be the reason for an increase in customer satisfaction, rather than or in addition to the Customer Service Refresher training program all representatives just attended.”

—Rose Polchin
Learning and Development²²

The best solution to not becoming a victim of this causality trap is to use a variety of data when drawing your conclusions. Always supplement your measurements (such as test scores) with as many other assessment types as reasonable, such as surveys, interviews, KPIs, and applied learning assignments, or other metrics. Then, look outside the training program to see what other factors may have had an impact.



Did You Know?

The Hawthorne effect, also known as the Observer effect, was named after a famous experiment in the 1920s designed to determine how illumination levels affected production in a Western Electric Plant. Researchers instead discovered that individuals tend to improve or modify their behavior in response to their awareness that they are being observed.¹³ While this shows that human behavior is very difficult to quantify exactly, it also demonstrates that simply the process of measuring training results can actually improve training success.

Certification: When Measurement Becomes an Achievement

Industry certification is a valuable metric for businesses to assess training effectiveness. Whether as an internal certification that has real executive sponsorship (backed by promotions, raises, or other recognition) or an external certification that validates the value of the training program, certification makes a difference.

Not only does it provide a tangible result, certification provides numerous benefits to both the employee and the organization alike, including:

- › Motivation during the learning process to learn and retain the material
- › Assurance that the employees' skills and knowledge are complete and up-to-date
- › Validation to colleagues and customers that the employees' skills are highly valuable
- › An employer-provided perk that improves employee retention and employer brand
- › A concrete incentive that employees can carry with them
- › A competitive differentiator as a company with certified employees
- › Opportunity for increased revenue from higher billings by certified consultants
- › Enabling staff to better evaluate the talents and skills of others, including new hires

If employee certification is one of your objectives and measures, make sure the training program developed by your company or your vendor fully prepares trainees to pass industry-standard certification exams. Ideally it should be validated by a reputable third-party organization related to that software or industry.

Measure Learning by Putting It to Work

Beyond tests and surveys, having trainees complete applied learning projects can provide the most accurate assessment of learning absorption. Best of all, having trainees complete such projects reinforces the learning process and helps ensure that they remember the skills and actually put them into use.

Because experiential learning has proven to be so effective, when you develop your program or choose a third-party training provider, we recommend you incorporate practical, applied learning exercises, and not just videos or other e-learning content.

Educators know that people learn in different ways—by observing, socializing and practicing. That is why Simplilearn training uses a blended learning approach, combining online self-paced lessons with instructor-led live virtual classrooms (LVCs). The education company also provide applied learning assignments that require participants to use their new skills to complete actual projects relevant to their specific discipline and industry.

Applied learning

Applied learning not only provides motivation for trainees to use what they’ve learned; it can equip them with skills in social interaction and collaboration. In many cases, the material employees create in their applied learning projects may be immediately useful in the performance of their actual jobs.

“You can design assessments to be more than an evaluation of what has been learned. You can design them to be a part of the learning process itself.”²¹

—Luanne Holder
eLearning Industry

Authentic tasks like applied learning measure and improve training. As Luanne Holder of eLearning Industry writes,



Did You Know?

In the 1980s, researchers working with the nonprofit Center for Creative Leadership created the The 70:20:10 Model for Learning and Development.¹⁸ According to their findings:

70% hands-on experience

20% social, collaborative learning

10% course-based instruction

A growing majority of experts contend that the pre-Internet 70:20:10 model does not reflect the current business market’s success and dependence on e-learning. However, the model “remains generally consistent with the developmental experiences of many individuals.”¹⁹

Examples of applied learning projects include:

- › Case studies
- › App development
- › Simulations
- › Debugging
- › Peer reviews
- › Market analyses
- › Solution scenarios

An effective training program will not just provide rote learning exercises, but will provide trainees with examples and projects that let them apply their new skills to real-world problems that they would be facing in their applicable industry. In this way, not only do trainees reinforce their learning—they actually train the organization itself.

Between the Tests: Midstream Measurement

Ongoing monitoring is the best way to ensure that employees don't neglect training obligations or fall behind. Periodic quizzes and practice projects can help.

Management and monitoring tools are especially important in large organizational training programs with many disparate learners. Tracking progress enables managers to level the training field and make sure all employees complete training regardless of their level and learning acumen. If an employee is falling behind, managers and live assistants can step in and get him or her back on track.

Tools like LMS dashboards enable managers to gauge and report to executives on the effectiveness of the training, even while it is underway. This eliminates unwelcome surprises, continuously motivates learners, and improves completion and certification rates.



What is an LMS?

Many training solutions include or integrate with a Learning Management System, or LMS. Among other things, an LMS usually provides dashboards that allow managers and trainees to see assigned and completed training modules, measure progress toward goals, and exchange feedback.

How Do You Measure Intangibles?

W. Edwards Deming, the world-renowned quality control guru, is often misquoted as saying, “You can’t manage what you can’t measure.” But in reality he called this a myth. In fact, he professed that one of the seven deadly diseases of management is running a company on visible figures alone.¹⁴

“Some metrics cannot be easily quantified, such as quality or creativity, but matter a great deal to the long term success of a business. Measuring these softer impacts is a matter of continuously asking questions.”⁹

—Laura Schaefer

Learning for the sake of learning may have its value in improving employee engagement, retention, and satisfaction. But some factors-like productivity-can be hard to quantify, let alone directly attribute to what was learned in the training rather than personal or external factors.

“The danger is that we mistake measures for the thing itself,” cautions John Hunter in the Curious Cat Management Improvement Blog. “Measures are a proxy and we need to understand the limitation of the data we use. We need to think.”¹⁴

In his book, *How to Measure Anything: Finding the Value of Intangibles in Business*, Douglas W. Hubbard advises, “After thinking through the intangible, we often find that our only barrier to measurement was that we didn’t understand what we wanted to measure.”¹⁶

“By the time you go back to your job, you’ve lost 90% of what you learned in training.”

—The American Society for Training and Development¹⁹

Continuous Learning

In an interview by Rachel Silverman in the *Wall Street Journal*, Eduardo Salas, professor of organizational psychology at the University of Central Florida, says skills decay is a big problem.

“The American Society for Training and Development says that by the time you go back to your job, you’ve lost 90 percent of what you’ve learned in training,” says Salas. “That’s why you need to reinforce. If you learn something and you don’t have the opportunity to practice, eventually you are going to lose it.”¹⁹

Done right, training can promote a culture of continuous and progressive learning that motivates the employee to strive for higher training levels and certifications. It’s critical to have a training program that provides opportunities for growth beyond the learning of basic skills. Offering a clear learning path—from foundation courses to more advanced and specialized levels—offers many advantages, including:

- › Inspiring trainees to see what is possible, within the training program and in their career path aspirations
- › Establishing a quantitative measurement of success through a structure of prerequisites for advancement to higher level courses
- › Validating and reinforcing retention of previously learned skills and concepts

Ongoing monitoring is the best way to ensure that employees don’t neglect training obligations or fall behind. Suggestions for prolonging the endurance of learned material include:

- › Applied learning exercises. Making them a part of your training program is a great first step in reinforcing the skills and knowledge your employees learn, and arms employees with practical models to adapt for future business uses.
- › Periodic Level 3 & 4 surveys. Continuously measuring how employees are applying new skills to their job not only provides a metric for gauging learning retention, it can even improve their performance due to the Hawthorne (observer) effect.
- › Reassessments. Periodically asking trainees to complete pop quizzes based on material they learned in training many months previously—or even asking former participants to re-take their initial assessment test (such as the OMCP practice exam, for digital marketers)—can alert trainees to rusty knowledge and inspire them to refresh their skills and stay current.
- › Dashboards and other LMS tools. The best training solutions include or integrate with a Learning Management System, or LMS. A good LMS includes dashboards that allow managers and trainees to see assigned and completed training modules, measure progress toward goals, and exchange feedback. By helping managers monitor who is advancing through training and who is lagging behind, companies can maximize their employees completion rates and success—even prior to testing.

Continuous learning is an ethos in our most technically challenging fields of knowledge. As astronaut Gene Cernan, the last man to walk on the Moon, said, “After 50 years of flying I’m still learning every time I fly.”

Training is a Measurable Journey

The best way to both measure and maximize your training ROI is to use a blended, holistic approach that combines elements from several or all of these techniques, including:

- › Definition of training/business goals
- › Pre- and post-training assessments
- › Customization for differing stages of learners
- › Ongoing testing and progress monitoring
- › Surveys collecting both data and comments
- › Trainee interviews (success case studies)
- › Applied learning projects for real-world practice
- › Periodic follow-up evaluations/re-assessments

Whatever method you use, your post-training measurement of success should match the goals you originally established.

“The ultimate payoff or added value of an employee’s learning experience is how well he or she performs on the job.⁸ What happens before and after a training session is just as important as the actual instruction itself.”¹⁹

—Eduardo Salas
University of Central Florida¹⁹

To be effective, training cannot be a one-time event. It is a continuous process. Through such elements as certification, applied tasks, and continuous learning paths, training programs can go beyond simple measures of tests and surveys, and instead enable employees and their companies to stay current and stay ahead in the ever-changing digital economy

About Simplilearn

Founded in 2009, Simplilearn is one of the world's leading providers of online training for Digital Marketing, Cloud Computing, Project Management, Data Science, IT Service Management, Software Development and many other emerging technologies. Based in Bangalore, India, San Francisco, California, and Raleigh, North Carolina, Simplilearn partners with companies and individuals to address their unique needs, providing training and coaching to help working professionals meet their career goals. Simplilearn has enabled over 1 million professionals and companies across 150+ countries train, certify and upskill their employees.

Simplilearn's 400+ training courses are designed and updated by world-class industry experts. Their blended learning approach combines e-learning classes, instructor-led live virtual classrooms, applied learning projects, and 24/7 teaching assistance. More than 40 global training organizations have recognized Simplilearn as an official provider of certification training. The company has been named the 8th most influential education brand in the world by LinkedIn.

For more information, visit www.simplilearn.com



Simplilearn delivers solutions that allow companies to optimize the impact that training and education has on overall company performance by driving revenue growth, and enabling a more productive employee.

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