

Report 2002

LEARNING OUTCOMES

ASTD's Fourth Annual Report on Standards for Evaluating Organizations' Investments in Education and Training



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 **ASTD**
*Linking People,
Learning & Performance*

Introduction

Employers' investments in workplace learning are growing rapidly and becoming increasingly strategic. In the United States, for example, direct spending on education and training in the typical firm grew from 1.5 percent of payroll in 1996 to 2.0 percent of payroll in 2000. Moreover, spending on training in the typical firm did not suffer in 2001 despite the country's recession. All around the world, firms' investments in training have remained constant and, in some regions, grown.

Education and training investments are rapidly increasing because organizations recognize that learning is necessary for success. And because rapid change is a fundamental attribute of the knowledge era, the capacity to learn and to do so quickly has become a major differentiator between those individuals and organizations that prosper and those that do not. In other words, the unfolding of the knowledge era has made organizations' investments in education and training increasingly strategic.

These two related forces—rapid increases in education and training spending, along with the increasingly strategic nature of these investments—demand that education and training be run as a business. As a result, workplace improvement practitioners are expected to rigorously measure the outcomes that these investments produce and, in so doing, generate the insight and understanding necessary to continuously improve those outcomes.

For the past four years, ASTD's Benchmarking Service has served as a vehicle for organizations to evaluate the effectiveness of their education and training investments using standardized, benchmarkable measures of learning outcomes. Perhaps more important, the information provided to organizations that participate in the Benchmarking Service provides rich diagnostic information that they can use to continuously improve their learning outcomes.

Since 1991, ASTD has been working in collaboration with firms with world-class training practices to create standards for measuring and valuing firms' investments in education and training. This work, conducted under the auspices of the ASTD Benchmarking Forum, initially consisted of creating and testing definitions and universally applicable metrics that would allow ASTD to measure firms' investments and what they were doing. Work on developing standard, benchmarkable measures of learning outcomes started in 1996.

In 1998, ASTD unveiled the measures in its *Measurement Kit™* and commenced its efforts to link investments and results; in other words, to create standard, outcome-based measures for valuing firms' investments in education and training. This report combines the data collected from 1998 to 2001 in order to substantially increase the power of the data to reveal significant findings. This report, the fourth annual in the Learning Outcomes series, provides an overview of what we have learned from the data that have been gathered thus far.

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Receive a Customized Training Analysis for Free!

Be sure to join the more than 4,500 organizations that have already participated (free!) in ASTD's confidential Benchmarking Service. Participating organizations providing data to ASTD on their training investments, practices, and/or outcomes (using the *ASTD Measurement Kit™*) receive a detailed customized report that normally sells for \$300 or more. The report shows how their training efforts stack up against as many as three other comparison groups and, for selected statistics, the top 10 percent of all participating companies. This report can be received almost instantaneously via email if data submission is completed electronically at www.astd.org. (Note: U.S. organizations are required to submit their data electronically. Only organizations outside the United States may submit data on paper.) All data are kept strictly confidential. Call or e-mail today to receive additional information on how to participate. Telephone 1.703.838.5841; e-mail benchservice@astd.org. Companies submitting Part II of the *ASTD Measurement Kit* before September 1, 2002 will receive a complimentary copy of the next *ASTD Learning Outcomes Report*.

How and What Learning Was Evaluated

The *ASTD Measurement Kit* is divided into two parts. Part I, entitled "Training Investments," provides a common set of definitions and metrics, allowing organizations to provide benchmarkable answers to the following questions:

- What is the content of the organization's education and training programs?
- How much does the organization invest in education and training?
- Who receives education and training?
- What are the organization's human resource policies and practices?
- How does the firm "measure up" on subjective indicators of organizational performance such as employee satisfaction, quality of products and services, customer satisfaction, and overall productivity?

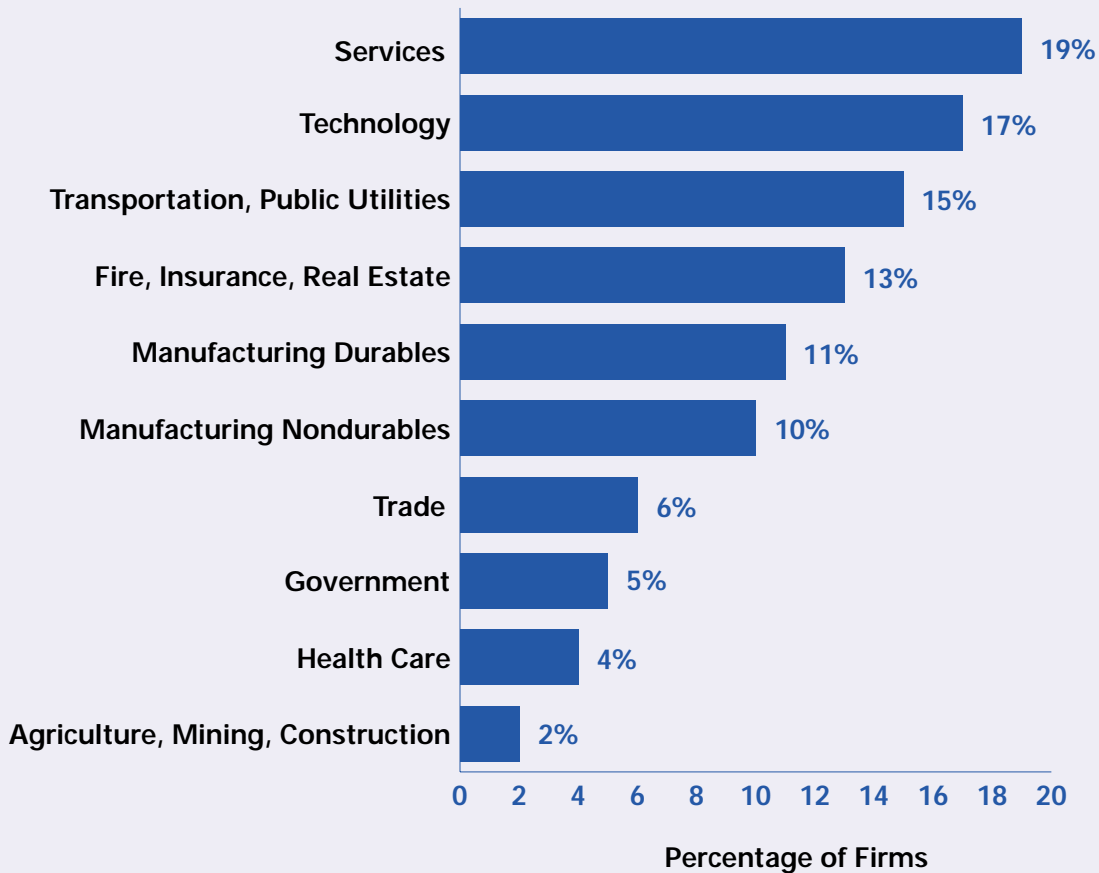
Part II of the *Measurement Kit* is entitled "Training Outcomes" and focuses on subjective measures organizations can use to gauge the success of their workplace education and training programs. Designed so they could be benchmarked across course content, type of delivery method, and industries, the measures in Part II were based on three evaluations:

1. Learners' initial assessment of the utility of what they learned,
2. Learners' follow-up assessment of the utility of their learning at three to 12 months after the learning event, and
3. Supervisors' follow-up assessment of the utility of the learning.

From 1998 through 2001, a total of 305 organizations responded to Part II. The resulting database includes 2,165 reports covering 19,938 courses and including more than 456,000 individual assessments of learning outcomes—a rich source of data that is unparalleled.

The firms responding to Part II of the *Measurement Kit* came from 36 countries and span six continents, although the majority (56 percent) were located in North America. Every major industry was represented (see Figure 1), and responding firms ranged from the very large (3.4 million employees) to the very small (10 employees). When the participating organizations were categorized by industry, the Services sector had the largest share (19 percent), followed by the Technology sector (17 percent). Agriculture, mining, and construction (AMC) remained the smallest sector with only 2 percent of the sample.

Figure 1. Distribution of Firms by Industry



Courses offered by the responding organizations covered the gamut from basic skills to job-specific technical skills (see Figure 2), with the vast majority (96 percent) delivered via classroom training. The largest group of courses offered was technical processes and procedures training (23 percent). The next largest groups were courses on professional skills (16 percent) and customer relations and information technology training (13 percent each). The smallest share of courses fell to executive development (2 percent).

Figure 2. Percentage of Courses Evaluated by Content Type



Nearly a quarter of the courses (29 percent) were delivered via learning technologies, principally by electronic mail, satellite TV, and intranet, while very few were delivered via other methods besides classroom instruction. In addition, 52 percent of the evaluated courses were voluntary for participants; 38 percent were mandatory; and the remaining 10 percent did not respond to the question. Many of the courses were intended to develop new capabilities (72 percent), while seventeen percent were offered to build upon existing skills (11% had unknown intentions).

Evaluating Courses by Content

With the metrics contained in ASTD’s Measurement Kit, organizations can measure and benchmark their learning outcomes at two different times: (1) an initial evaluation can be administered to learners at the conclusion of the learning event; and (2) a follow-up evaluation can be administered to learners and/or their supervisors once the training can be applied to the learners’ jobs, typically one to six months after the end of the learning event.

The initial evaluation is roughly akin to a “Level 1” evaluation (using the terminology of Donald Kirkpatrick), which gauges the learner’s reactions to the course. Rather than mere reaction measures to the learning event as is common in the traditional “smile sheet” assessment, ASTD’s initial evaluation measures learners’ assessments of the potential utility of what they have learned. ASTD’s follow-up evaluation is similar to a “Level 3” evaluation which measures the transfer of the learning into behavior on the job. It focuses on learners’ and supervisors’ assessments of the productivity effects of the learning intervention.

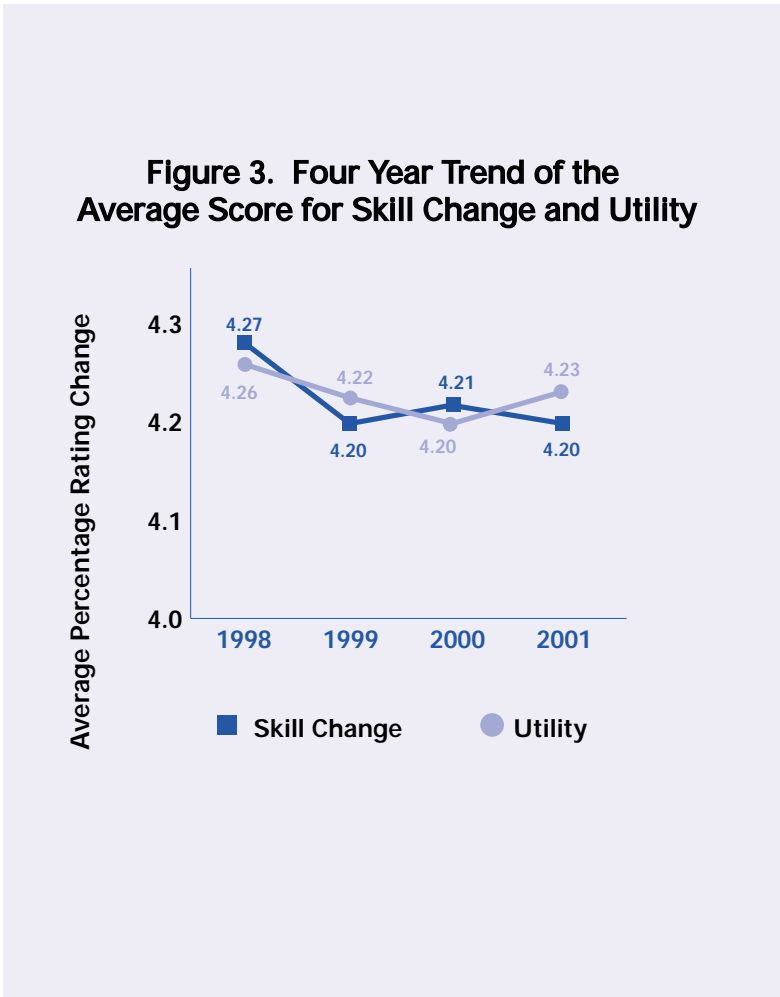
The *Measurement Kit* provides organizations with benchmarks on the outcomes of learning that allow them to assess whether their results fall inside or outside acceptable ranges. With the data provided by participating organizations, we are able to assess the outcomes of different types of training, as perceived by the learner and/or the learners’ supervisors.

In addition to outcomes measures, the *Measurement Kit* gathers data on a variety of barriers and enablers to producing excellent learning outcomes. Examples of these barriers and enablers include the facilities and equipment for the course and the amount of coaching learners received from their supervisors after the event. (See the *Measurement Kit™* questionnaire in the Appendix for other barriers and enablers.) The benchmarking data on these variables can then be used by the organizations that participate in ASTD’s Benchmarking Service as diagnostic information for improving learning outcomes that may have fallen short of their expectations or industry benchmarks.

Initial Evaluations: Participants

Two key questions in the initial evaluation ask learners to predict the future utility of what they have learned. These questions read: “My knowledge and/or skills increased as a result of this course” and “The knowledge and/or skills gained through this course are directly applicable to my job.” Respondents answer each question on a scale of 1 to 5, with higher numbers indicating greater utility.

Figure 3 illustrates the year-to-year trend in the average score assigned by learners to these measures. The average scores have fluctuated somewhat during this period, but have remained within a relatively narrow range between 4.2 and 4.3 for both measures. The differences from one year to the next and between measures for a given year, statistically speaking, are not different from one another.



Figures 4 and 5 summarize benchmarking results of the courses from initial evaluations combined across the four years (1998-2001). As Figure 4 shows,

- The overall average score for all courses was 4.23.
- The highest ratings were given to sales and dealer training, new employee orientation, product knowledge training, and information technology (IT) skills.
- The lowest initial evaluations came from participants who attended courses on quality, competition, and business practices, basic skills, and occupational safety/compliance.

Figure 4. Initial Evaluation of Skill Charge



A comparison of the data in Figures 4 and 5 reveals a high degree of correspondence between the two key initial evaluation questions. This suggests that learners' self-assessment of how much they learned is highly associated with their prediction of the usefulness (i.e., the applicability of the learning to their job) of what they have learned. As Figure 5 shows,

- The overall average score for all courses was also 4.23.
- The highest ratings were given to sales and dealer training, managerial skills training, and training on technical processes and procedures.
- The lowest initial evaluations came from participants who attended courses on quality, competition, and business practices, executive development, and basic skills.
- Only ratings for the following course types were statistically different from the overall average of 4.23: sales and dealer, managerial skills, and quality, competition and business practices. All but the last received higher-than-average marks.

Figure 5. Initial Evaluation of Utility



ASTD's Individual Learner Outcomes Benchmarking Service

Most organizations take advantage of ASTD's standard measures of learning outcomes by participating in the ASTD Benchmarking Service. The service provides organizations the opportunity to benchmark the effectiveness of various types of courses against similar courses offered by other organizations. Organizations report this information to ASTD on a course by course basis.

However, few organizations realize that ASTD also offers the capability for each training participant (and his or her supervisor) to submit their individual assessments online, directly into ASTD's benchmarking database. In this custom service, ASTD works with each organization to set up the websites where the information is entered as well as the evaluation reports that they wish to receive.

America's Learning Exchange (ALX)

The individual reporting capability was originally developed with funds from the Department of Labor for its online learning portal, America's Learning Exchange (www.alx.org). The measures in the initial evaluation section of ASTD's Learning Outcomes have been used by the Department of Labor since 1999 to collect feedback from learners who have received training through ALX-listed providers and their courses. The data derived from this feedback are designed to be used as part of the agency's assessment of the effectiveness of the learning portal.

The State of Oregon

An excellent example of the variety of ways organizations can take advantage of ASTD's customized individual reporting system is a new project with the State of Oregon. Several times a year, Oregon awards grants through its Current Workforce Skill Development program to organizations and their partner providers that are investing in skill development for incumbent workers. Each year, up to \$2 million in funds is awarded and thousands of workers receive training funded by the grants. One of the requirements of the Workforce Investment Act, the source of these grants, is regular evaluation of the training programs it funds.

Oregon turned to ASTD's individual reporting system to administer a standard set of evaluation questions to the participants in its program in 2002 and 2003. For each participant who completes the evaluation, the data are entered online directly into the ASTD database. The system then provides Oregon with the capacity to obtain reports at varying levels of aggregation, from the course-level, the provider-level, the local Workforce Investment Board level, the regional-level, and even statewide. With standard metrics, different programs can be compared directly to one another and tracked over time for their effectiveness.

(To find out more about how your organization can work with ASTD, call us at 1.703.838.5841 or send us email at benchservice@astd.org. Note: this is a fee-based service.)

Follow-Up Impact Evaluations: Participants and Supervisors

The key questions measuring the impact of the learning intervention in the follow-up evaluation from the learners' perspective were "As a result of this course, my performance on the course objectives has changed by ___%" and "As a result of this course, my overall job performance has changed by ___%." Analogous questions were asked in the follow-up survey completed by the learners' supervisors.

Figure 6 depicts the trend over the previous four years in the average responses by learners and supervisors to these questions. The averages for all four measures display remarkably similar curves. The average impact scores rose between 1998 and 2000, then dropped in 2001. Were it not for 2000, the impact scores would have show a fair amount of stability.

When the responses across all four years are combined, Figures 7 and 8 illustrate the degree of correspondence between these two questions in the minds of the learners. Across all courses, learners reported that their performance on the objectives of the courses rose 36 percent and their overall job performance rose 31 percent. The types of courses producing the greatest gains in terms of course objectives were also the ones that produced the greatest increases in performance. From the learner's perspective:

Figure 6. Four-Year Trend on Follow-Up Evaluation of Course Objective and Overall Job Performance

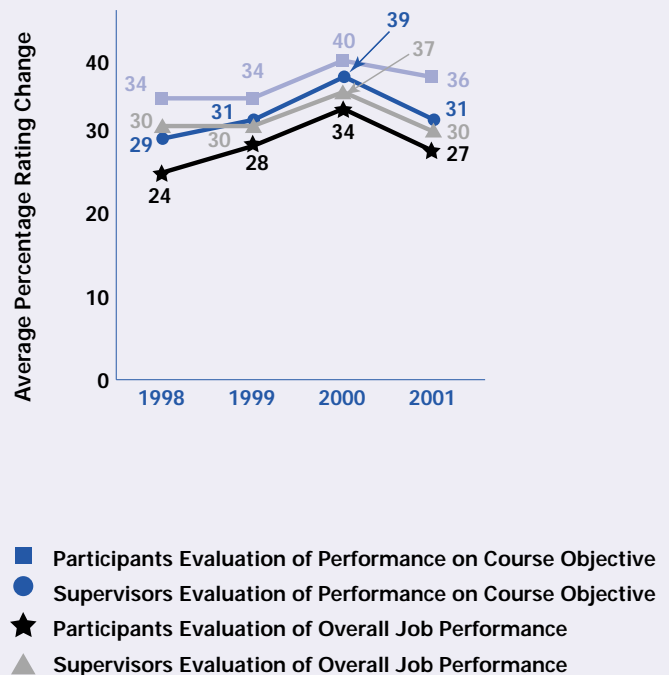


Figure 7. Follow-Up of Performance on Course Objectives



- The most effective courses included those on product knowledge, sales and dealer, IT skills, and technical processes and procedures.
- The least effective courses, with lower-than-average performance gains on both measures, were those on quality, competition, and business practices; managerial/supervisory skills; and interpersonal communication.

From the supervisors' perspective, the average improvement on course objectives was about 32 percent and the average increase in job performance was 28 percent. With a few exceptions, supervisors tend to estimate the impact of training to be somewhat lower than do learners. The two exceptions were identical on both outcome measures: supervisors tend to report higher impact than learners in courses involving new employee orientation and executive development.

Overall, supervisors reported that new employee orientation and product knowledge courses produced the greatest performance gains on their course objectives, and that product knowledge courses yielded the greatest overall improvement in job performance. Supervisors reported the smallest improvements on course objectives and overall job performance for courses involving quality, competition, and business practices.

Figure 8. Follow-Up Evaluation of Overall Job Performance



Predicting the Utility of Learning

Measuring the extent to which education and training affect job performance can be a difficult and time-consuming task. One of the issues that the *Measurement Kit* was designed to address was the extent to which a well-designed initial evaluation could “predict” follow-up evaluations (of either learners or their supervisors). This is an important question; to the extent that initial evaluations do predict follow-up evaluations, follow-up evaluations may not be necessary under some circumstances. Moreover, if the initial evaluations do have significant predictive power, then they can be used to spot early warning signals when things are not going well and corrective action needs to be taken.

Fortunately, a substantial number of organizations responding to the *Measurement Kit* reported learning outcomes using at least two of the three evaluation forms provided by ASTD¹—including the initial evaluation by participants and the follow-up evaluations by both participants and supervisors.

Comparing Initial and Follow-Up Evaluations

When comparing learners' initial evaluations of utility with their follow-up evaluations of impact, we find that the two sets of evaluations of the course types vary somewhat. Certain course types achieved about the same relative ranking in both time periods. Course types rated highly on both initial utility and follow-up impact included training on sales and dealer, and technical processes and procedures.

Other course types had greater disparities. The course types exhibiting the greatest difference in initial and follow-up evaluations were courses on product knowledge and managerial skills. In the case of product knowledge courses, learners tended to rate it's utility lower than other courses initially, but both they and their supervisors reported that product knowledge had some of the highest impact scores. By contrast, training in managerial skills, which received higher-than-average initial evaluations for utility, was ranked near the bottom in terms of impact on job performance by both learners and their supervisors.

In general, however, course types rated below average on the initial evaluation were also rated below average on follow-up impact. Correlations between scores on the initial evaluation form for utility and on the follow-up evaluation form for impact support this observation (see Table 1). Learners' assessments of initial utility are significantly and positively associated with their assessments of impact at the time of the follow-up evaluation. This finding, which has held true since we began collecting these data, is evidence that assessments of utility can provide a preliminary indication of how much impact a given course may have on job performance.

Table 1. The Correlations of Utility to Perceived Impact among Course Participants

Follow-Up Impact Questions ^b	Initial Questions on Perceived Impact ^a		
	Skills Increased as a Result of Course (Q11)	Knowledge/Skills are Directly Applicable to Job (Q12)	Overall Satisfaction with Course (Q13)
Performance Change on Course Objectives (Q9)	0.211	0.178	0.168
Overall Job Performance (Q10)	0.197	0.162	0.142

Note: All correlations are statistically significant at $p > .05$ (2-tailed test).

^a See ASTD Measurement Kit, Part II-A, Questions 11, 12, and 13 in Appendix.

^b See ASTD Measurement Kit, Part II-B, Questions 9 and 10 in Appendix.

Table 2.1 presents the correlations between learners’ initial evaluations and the follow-up evaluations of their supervisors. Tables 1 and 2.1 reveal that the best predictor of both learners’ and supervisors’ follow-up assessments of the impact of training is Question 11 from the initial evaluation (“My knowledge and/or skills increased as a result of this course”).

Table 2.1. The Correlations of Utility to Initial Perceived Impact Between Course Participants and Supervisors

Initial Participant Questions on Perceived Impact ^a	Follow-Up Impact Questions for Supervisors ^b	
	Performance Change on Course Objectives (Q9)	Overall Job Performance (Q10)
Skills Increased as a Result of Course (Q11)	0.207	0.208
Knowledge/Skills are Directly Applicable to Job (Q12)	0.156	0.210
Overall Satisfaction with Course (Q13)	0.133	0.167

Note: All correlations are statistically significant at $p > .05$ (2-tailed test).

^a See ASTD Measurement Kit, Part II-A, Questions 11, 12, and 13 in Appendix.

^b See ASTD Measurement Kit, Part II-B, Questions 9 and 10 in Appendix.

Moreover, the correlations between learners’ and supervisors’ follow-up evaluations are strikingly large (see Table 2.2). Despite the differences in Figures 7 and 8, the level of correspondence between learners’ and supervisors’ evaluations are as high as .72 on a scale of 0 to 1. This correlation tells us that learners and their supervisors strongly agree about the effects of training on performance.

Table 2.2. The Correlations of Utility and Follow-Up Perceived Impact Between Course Participants and Supervisors

Follow-up Impact Questions for Participants ^a	Follow-Up Impact Questions for Supervisors ^a	
	Performance Change on Course Objectives (Q9)	Overall Job Performance (Q10)
Performance Change on Course Objectives (Q9)	0.705	0.633
Overall Job Performance (Q10)	0.632	0.718

Note: All correlations are statistically significant at $p > .05$ (2-tailed test).

^a See ASTD Measurement Kit, Part II-B, Questions 9 and 10 in Appendix.

The high degree of correspondence between supervisors’ and learners’ assessments is an important finding for at least two reasons. First, it is testimony to the validity of subjective assessments of training’s impact, as two independent parties are providing very similar evaluations. Second, it means that under many circumstances a follow-up assessment by supervisors will not be necessary.

Evaluating Courses by Their Characteristics

The benchmarking statistics in the previous section allow us to compare and contrast participants' and supervisors' perceptions of learning outcomes based on the content of training—for example, based on whether the training focused on basic skills or job-specific technical skills.

In this section, we look at the potential impact on learning outcomes of other characteristics of the courses, such as the design of the training and the manner of delivery. Knowing how factors such as these correlate with good or bad outcomes should provide practitioners with a greater understanding of what works and help them to make education and training more effective. The following are the statistically significant findings that emerged from the combined data collected with the 1998 through 2001 *Measurement Kit*.

Figure 9.1. Participant Follow-Up, Voluntary vs. Mandatory Participation

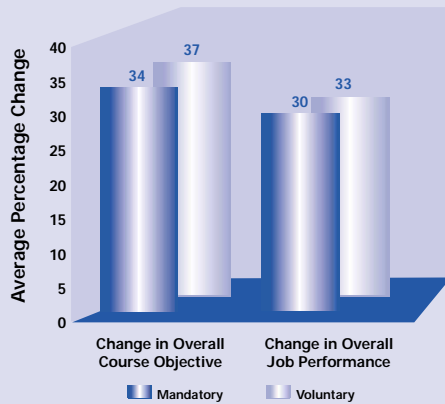
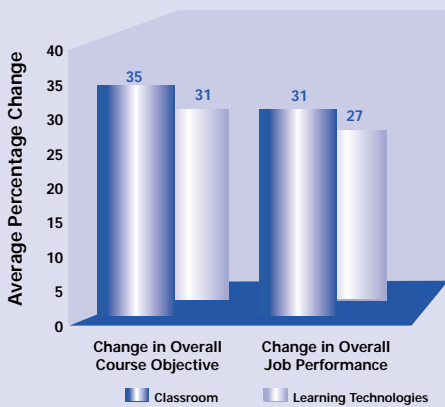


Figure 9.2. Participant Follow-Up, Delivery via Classroom vs. Learning Technologies



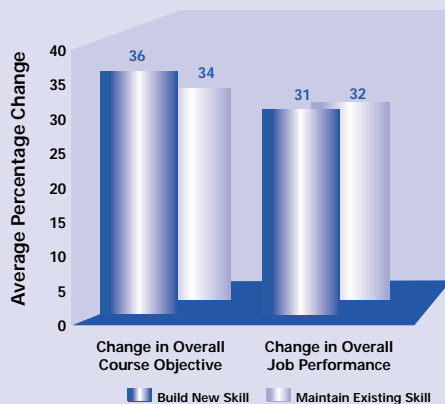
Mandatory vs. Voluntary

Contrary to our 2001 Learning Outcomes report, participant follow-up evaluations reveal that the learning outcomes of mandatory courses are somewhat lower than the outcomes of voluntary courses (see Figure 9.1). This finding corresponds with results in previous years suggesting that students learn more when the courses are of their own choosing.

Classroom Training vs. Learning Technologies

As in previous years of this report, the results from all three sets of evaluations reveal that learning outcomes are, in general, higher when the training is delivered via classroom training as opposed to electronic learning technologies (see Figure 9.2).

Figure 9.3. Participant Build-Up, Maintaining Existing Skill vs. Build New Skill



Several caveats should be kept in mind when interpreting these results, however. First, the percentage of the courses submitted to ASTD's Benchmarking Service delivered via learning technologies remained very small (4 percent). In fact, only about 8 to 9 percent of all training during this period was delivered via learning technologies. Second, it is possible that other aspects of the courses, apart from their delivery method, account for these differences (e.g., quality of course design). Third, the finding does not tell us anything about the cost effectiveness of learning technologies versus classroom training.

Maintaining an Existing Skill vs. Building a New Skill

Participants' evaluations indicate that training to build a new skill has greater impact on their performance on the course objectives than training to maintain an existing skill (see Figure 9.3). Training for skill maintenance is likely to improve a person's performance on that skill only incrementally. However, this year, we find no difference in the learners' overall job performance resulting from the two different types of courses.

The Content, Quality, and Administration of Learning

The initial evaluation form asked learners to assess a number of aspects of their training experience. With this information, we were able to assess how factors concerning the content, quality, and nature of the training experience correlate with its potential impact on job performance. The importance of these factors for job performance on a scale of 0 to 1 (with 1 indicating the highest importance) is shown in Table 3.

Table 3. Correlations of Participants' Initial Training Evaluation Factors with Perceived Impact

Initial Evaluation Factors ^b	Initial Questions on Perceived Impact ^a		
	Skills Increased as a Result of Course (Q11)	Knowledge/Skills are Directly Applicable to Job (Q12)	Overall Satisfaction with Course (Q13)
Administrative/logistics (Overall Correlation)	0.461	0.520	0.512
Participant had Knowledge/Skills Necessary to Take Course (Q1)	0.400	0.476	0.407
Facilities and Equipment were Favorable for Training (Q2)	0.586	0.631	0.655
Content (Overall Correlation)	0.591	0.620	0.700
Course Available When Needed (Q3)	0.564	0.576	0.569
Clearly Understood Course Objectives (Q4)	0.641	0.657	0.672
Course Met All Stated Objectives (Q5)	0.682	0.663	0.783
Design	0.706	0.672	0.745
Course Delivery Method overall correlation was Effective for Learning (Q6)	0.634	0.668	0.692
Course Materials were Useful (Q7)	0.642	0.662	0.731
Time was Adequate for Learning Course Subject Matter (Q8)	0.477	0.563	0.625
Course was Logically Organized (Q9)	0.673	0.708	0.746
Instructor			
Overall Satisfaction with Instructor (Q10)	0.682	0.693	0.778

Note: All correlations are statistically significant at $p > .05$ (2-tailed test).

^a See ASTD Measurement Kit, Part II-A, Questions 11, 12, and 13 in Appendix.

^b See ASTD Measurement Kit, Part II-A in Appendix, for actual wording of Questions 1 to 10.

The results indicate that learners' satisfaction with the organization of the content and with the instructor had the strongest influence on the extent to which they thought they would be able to apply the material in the course to their jobs (see the second column of numbers in Table 3). These factors were closely followed by the extent to which the delivery mechanism was effective, the course met its objectives, the materials were useful, and they understood the course objectives. Of least importance was whether the learners felt they had the knowledge or skills required to take the course. Their overall satisfaction with the course was correlated with the same set of factors (see the third column of numbers).

The follow-up evaluation form asked learners to assess a number of barriers and enablers associated with the transfer of learning to their jobs. We could then determine how these factors correlated with learners' follow-up assessment of the impact of the training. The importance of these factors, is displayed in Table 4.

Table 4. Correlations of Participants' Assessments of Training Barriers and Enablers with Follow-Up Impact Questions

Barriers and Enablers of Transfer ^b	Follow-Up Impact Questions ^a	
	Change in Performance (Q9)	Change in Overall Job Performance (Q10)
Overall Barriers/Enablers Correlation	0.433	0.404
Participant Received Necessary Assistance in Preparation for Course (Q5)	0.297	0.273
Course Content Reflects What Happens on the Job (Q6)	0.348	0.322
Participant had Access to Necessary Resources to Apply Knowledge/Skills to Job (Q7)	0.386	0.316
Participant Received Help in Applying Knowledge/Skills to Job (Q8)	0.359	0.370

Note: All correlations are statistically significant at $p > .05$ (2-tailed test).

^a See ASTD Measurement Kit, Part II-B, Questions 9 and 10 in Appendix.

^b See ASTD Measurement Kit, Part II-B in Appendix, for wording of Questions 5 to 8.

As in previous years, the top three enablers for the transfer of the learning were (1) an opportunity to actually use the knowledge or skills; (2) help with applying the knowledge or skills through coaching or feedback, and (3) content that reflected what actually happens on the job. Whether learners had actually used the knowledge or skills before taking the course mattered less, but was still important.

These correlations provide important diagnostic information that organizations can use to improve their learning outcomes. If, for example, an organization struggles with some of the most important factors correlating with excellent learning outcomes, then focusing additional effort on improving these factors will result in improved learning outcomes. Conversely, if an organization performs well on those factors that have a lower correlation with excellent learning outcomes, then it may be appropriate to spend less effort and fewer resources on those factors.

The Organizational Context for Learning

In this year's *Learning Outcomes Report*, we observed a wide variation of learning outcomes when we grouped courses by the industry of the organization in which the courses were offered. Figures 10 and 11 display the means of each industry sector for the learners' initial and follow-up evaluations of the courses, respectively.

Figure 10 shows the average initial assessments across industry groups for perceived impact of the knowledge and skills gained through training programs. The initial evaluations tend to be highest in three industry sectors: health care, technology, and finance/insurance/real-estate. The lowest average evaluations on both initial impact assessments were reported in the trade sector.

Figure 10. Participants' Perceived Impact of Knowledge and Skills Gained Through Training by Industry Groups

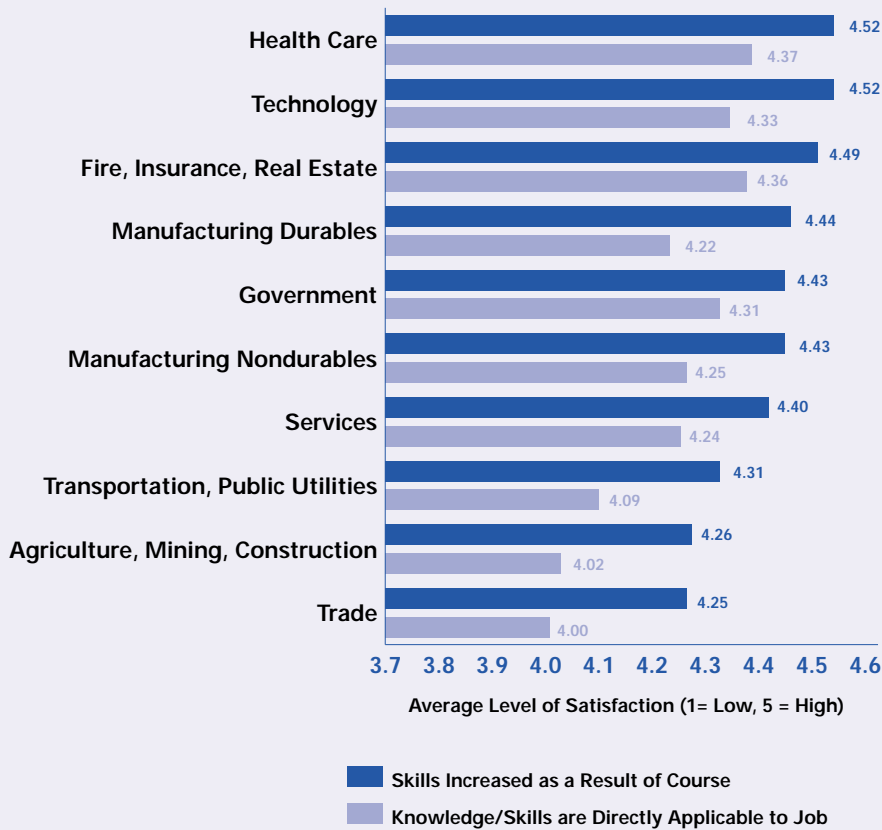
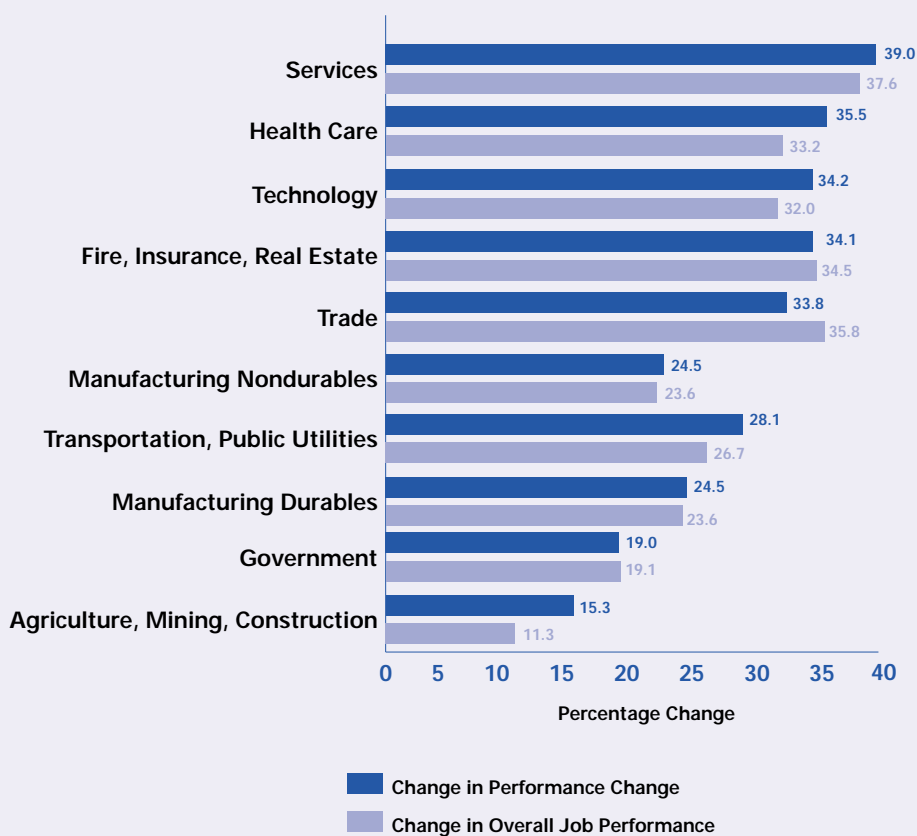


Figure 11 illustrates the average impact of training programs on participants' course objectives and overall job performance across industry sectors. Evaluations of trade sector courses fared better on their follow-up evaluations, ranking the sector in the top five. The follow-up evaluations show that the services industry sector had the highest evaluations, followed by health care, technology, finance, insurance, and real-estate. The least effective courses on average, by these measures, were clearly found in the agriculture, mining, and construction sector.

Figure 11. Participants' Impact Measures on Course Objectives and Overall Job Performance by Industry Group



The Top of the Charts

In this year's report, for the first time ever, we examined the trend in the top five types of courses from 1998 to 2001 (see Table 5). Since the ultimate objective of any training is to meet a performance need within the organization, we selected the change in the participant's overall job performance as the criteria for ranking the courses. To ensure that we had a balanced view of the change, we accounted for not only the learners' perspectives, but also those their supervisors.

While customer relations courses ranked #1 in 2001, courses on product knowledge ranked first or second in 1999, 2000, and 2001. As a result, these courses earned the highest overall ranking when all four years were combined. New employee orientation courses ranked in the top five in 1998 and 1999, but did not fare as well in later years. Nonetheless, positive evaluations over the years made new employee orientation the second most effective type of training, mostly on the strength of supervisors' evaluations. Executive development courses, somewhat surprisingly made it onto the overall top five list, despite not making into the top five in any single year. Supervisors have consistently ranked executive development courses as some of the strongest performance-enhancing courses each year.

Table 5. Top Five Course Types Ranked by Percentage Change in Overall Job Performance, 1998 to 2001

Year	#1 Course type ^a (%)	#2 Course type (%)	#3 Course type (%)	#4 Course type (%)	#5 Course type (%)
2001	Customer (49.0)	Product (42.6)	Sales (37.8)	Safety (35.4)	Basic (33.7)
2000	Product (57.2)	Safety (56.3)	Quality (50.4)	Executive (43.1)	Interpersonal (42.4)
1999	Product (46.9)	Orientation (45.4)	Customer (38.0)	IT Skills (34.0)	Technical (34.0)
1998	Orientation (42.6)	Sales (40.2)	Basic (32.6)	IT Skills (32.2)	Customer (29.9)
All Years	Product (49.4)	Orientation (36.4)	Customer (34.7)	Sales (34.2)	Executive (33.8)

^a Abbreviations: Customer = Customer relations; Sales = Sales and dealer; Product = Product knowledge; Quality = Quality, competition and business practices; Executive = Executive development; Safety = Occupational safety/compliance; Interpersonal = Interpersonal communication; IT Skills = Information technology skills; Technical = Technical processes and procedures; Basic = Basic skills; Orientation = New employee orientation.

Conclusions and Next Steps

Thousands of organizations all over the world have now used the *ASTD Measurement Kit* as a method of benchmarking and continuously improving their education and training functions. As more organizations have participated, the quality of the diagnostic and benchmarking information has increased, and ASTD is able to provide detailed diagnostic reports to those organizations that use its Benchmarking Service.

The benchmarking database which has been amassed serves a number of important purposes. First, summaries of the data, such those found in this report, represent a significant step toward establishing international standards for measuring and valuing organizations' investments in education and training. For individual organizations, the *Measurement Kit* and the data collected can be used as a tools for continuously improving the education and training they provide. Finally, measurement and evaluation are necessary if organizations want increase the strategic relevance of education and training. Data on the outcomes and impact of the training are critical to demonstrating the value of training key decision makers within organizations.

The standard metrics contained in the *ASTD Measurement Kit* allow organizations to compare their training to that of other organizations and their various courses to one another. Ultimately, all organizations will benefit as the bar on performance for training is raised as organizations collectively strive to improve their training outcomes. We invite your organization to be part of this effort to enhance the quality of training provided by firms all over the world.

Endnote

¹The database contains 312 reports on the same type of course using both the initial evaluations by participants and the participants' follow-up evaluations; 238 reports based on the participants' initial evaluations and the follow-up evaluations by supervisors; and 380 reports containing information from both participant and supervisor follow-up evaluations.

Glossary

Industry Sectors

Agriculture/Mining/Construction. Organizations such as agriculture producers; mining, oil exploration, and extraction companies; construction companies; fisheries; and forestry.

Finance/Insurance/Real Estate. Organizations such as banks and other credit institutions, insurance companies, securities brokers, and real estate companies.

Government. Federal, state, and local government organizations or agencies (except public education).

Health Care. Organizations such as hospitals, clinics, doctors' offices, and home care companies.

Manufacturing Durables. Manufacturers of durable goods such as wood products, stone and glass products, fabricated metal products, machines and electrical equipment, and transportation equipment.

Manufacturing Nondurables. Manufacturers of nondurable goods such as food and beverages, apparel, textiles, plastics and chemicals, paper and pulp, rubber, petroleum products, and leather. Also includes printers, publishers, and refineries.

Services. Organizations such as hotels; business and personal services; automotive repair companies; professional services; educational institutions (public and private); legal, social, and other consumer services.

Technology. Organizations such as computer, electronics, and communications equipment manufacturers; software designers; telecommunications services; information technology services and consulting firms; and manufacturers of medical equipment and other precision instruments.

Trade. Organizations such as retail and food stores; home furnishings and equipment stores; general merchandise stores; food and beverage facilities; apparel and accessory stores; building materials, hardware, garden supply, and mobile home dealers; and wholesale trade or distributors.

Transportation and Public Utilities. Organizations such as power, water, and gas utilities; trucking and warehousing companies; airlines and railroads; water transportation companies; and parcel services.

Course Types

basic skills. Development or remedial training fundamental to the workplace; includes courses such as literacy, reading comprehension, writing, math, English as a second language, and learning how to learn.

customer relations. Training on how to improve customer relations and provide customer service. Includes client-relations training for customer service/telephone/call center operators.

executive development. Training to develop the leadership and vision of current and potential senior executives. Such programs focus on responsibilities and challenges for leading corporate-wide initiatives or major business units. Includes strategic planning, policymaking, and goal setting.

information technology skills. Training in the use of the company's information technology and systems, including off-the-shelf and company-specific software such as word processing, spreadsheets, databases, graphics, and communications. Also includes training for information technology professionals on the programming, support, maintenance, and administration of these internal systems.

interpersonal communication. Training in communication and cooperation among individuals and groups, including conflict resolution, stress management, diversity training, teamwork, and group dynamics.

managerial/supervisory skills. Training to improve the ability and effectiveness of employees to lead, manage, and supervise projects and teams/groups. Topics include human resource management, project management, process management, and planning and budgeting.

new employee orientation. Training designed to provide new employees with uniform introductory information about the company and its organization, mission, functions, policies, compensation, benefits, services, work requirements, standards, rules, safe work habits, and desirable employee-management relations.

occupational safety/compliance. Instruction provided to meet Environmental Health and Safety, Equal Employment Opportunity, and Affirmative Action requirements; right-to-know; and government-mandated training.

product knowledge. Training about the products and services of the company.

professional skills. Training in a specialized body of knowledge or expertise such as accounting, engineering, manufacturing systems, optics, electronics, mechanics, materials science, chemistry, physics, legal, medical, financial services, banking, and consulting. Such training is discipline or industry specific.

quality, competition, and business practices. Training in total quality management, business process reengineering, change management, benchmarking, resource planning, business ethics, business fundamentals, and time management.

sales and dealer. Training provided to the sales force, franchisees, and dealers to develop the attitudes, skills, and habits needed to demonstrate the effectiveness of their products and services and to influence the purchasing decisions of prospects and customers.

technical processes and procedures. Training that focuses on the company's processes and procedures to create and maintain its products and deliver its services. Includes training provided to employees who operate, maintain, and use machinery, except information technology.

Learning Technologies

learning technologies. General term for electronic technologies that deliver information and facilitate the development of skills and knowledge.

electronic mail (email). The exchange of messages through computers.

intranet. A general term describing any network contained within an organization; used to refer primarily to networks that use Internet technology.

satellite TV. The transmission of television signals via satellites.

Appendix

ASTD Measurement Kit Part II-A

Initial Evaluation:

Core Questions (Participants Only)

ASTD Measurement Kit Part II-B

Follow-Up Evaluation:

Core Questions (Participants)

ASTD Measurement Kit Part II-B

Follow-Up Evaluation:

Core Questions (Supervisor)

Part II-A: Initial Evaluation: Core Questions (Participants Only)

Scale for Initial Evaluation Core Questions

Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
1	2	3	4	5

ADMINISTRATIVE/LOGISTICS

1. I had the knowledge and/or skills required to start this course.
2. The facilities and equipment were favorable to learning.

CONTENT

3. I was able to take this course when I needed it.
4. I clearly understood the course objectives.
5. The course met all of its stated objectives.

DESIGN

6. The way this course was delivered (such as classroom, computer, video) was an effective way for me to learn this subject matter.
7. Participant materials (handouts, workbooks, etc.) were useful during the course.
8. I had enough time to learn the subject matter covered in the course.
9. The course content was logically organized.

INSTRUCTOR

10. Overall, I was satisfied with the instructor(s).

PERCEIVED IMPACT

11. My knowledge and/or skills increased as a result of this course.
12. The knowledge and/or skills gained through this course are directly applicable to my job.
13. Overall, I was satisfied with this course.

Part II-B: Follow-Up Evaluation: Core Questions (Participant)

Scale for Core Questions 1-8

Not at all or never/rarely	To a small extent	To a moderate extent	To a great extent	To a very great extent	Not applicable
1	2	3	4	5	NA

Use of Skills

1. To what extent did you use the knowledge and/or skills prior to attending this course?
2. To what extent have you had the opportunity to use the knowledge and/or skills presented in this course?
3. To what extent have you actually used the knowledge and/or skills presented in this course after completing the course?

Confidence in Ability to Perform

4. To what extent has your confidence in using the knowledge and/or skills increased as a result of this course?

Barriers and Enablers of Transfer

5. To what extent did you receive the assistance necessary in preparing you for this course?
6. To what extent has the content of this course accurately reflected what happens on the job?
7. To what extent have you had access to the necessary resources (e.g., equipment and information) to apply the knowledge and/or skills on your job?
8. To what extent have you received help, through coaching and/or feedback, with applying the knowledge and/or skills on the job?

Impact Measures

9. As a result of this course, my performance on the course objectives has changed by _____.% (please indicate +/-)
10. As a result of this course, my overall job performance has changed by _____.% (please indicate +/-)

Part II-B: Follow-Up Evaluation: Core Questions (Supervisor)

Scale for Core Questions 1-8

Not at all or never/rarely	To a small extent	To a moderate extent	To a great extent	To a very great extent	Not applicable
1	2	3	4	5	NA

Use of Skills

1. To what extent did s/he use the knowledge and/or skills prior to attending this course?
2. To what extent has s/he had the opportunity to use the knowledge and/or skills presented in this course?
3. To what extent has s/he actually used the knowledge and/or skills presented in this course since completing the course?

Confidence in Ability to Perform

4. To what extent has her/his confidence in using the knowledge and/or skills increased as a result of this course?

Barriers and Enablers of Transfer

5. To what extent did s/he receive the assistance necessary in preparing for this course?
6. To what extent has the content of this course accurately reflected what happens on the job?
7. To what extent has s/he had access to the necessary resources (e.g., equipment and information) to apply the knowledge and/or skills on the job?
8. To what extent has s/he received help, through coaching and/or feedback, with applying the knowledge and/or skills on the job?

Impact Measures

9. As a result of this course, her/his performance on the course objectives has changed by _____.% (please indicate +/-)
10. As a result of this course, her/his overall job performance has changed by _____.% (please indicate +/-)

ASTD is the world's leading association of workplace learning and performance professionals, forming a world-class community of practice. ASTD's 70,000 members come from more than 100 countries and 15,000 organizations – multinational corporations, medium-sized and small businesses, government, academia, consulting firms, and product and service suppliers.



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