You can’t manage what you can’t measure.

Ensuring that learning drives measurable business value

“When it comes to specific measures concerning employee skills, strategic information availability and organizational alignment, companies have devoted virtually no effort for measuring either the outcomes or the drivers of these capabilities. This gap is disappointing since one of the most important goals for adopting the scorecard measurement and management framework is to promote the growth of individual and organizational capabilities.”

—Robert S. Kaplan and David P. Norton, The Balanced Scorecard
**Why learning is fueling new business growth**

After a few tough years focused mainly on corporate survival, top executives today—and company shareholders—are shifting their sights to improving performance. A recent IBM study of more than 450 top CEOs around the world found that organizations are actively seeking ways to boost financial performance, primarily through revenue growth.1 What will fuel this growth, according to the study, is the development of new products and services, as well as expansion into new markets.

These executives also believe that their organizations aren’t adequately prepared to recognize, analyze and respond to changing market conditions and risks, capabilities crucial to creating new revenue opportunities. So it’s not surprising that becoming more responsive as an organization is also top of mind for these executives.

To grow and become more responsive, companies are focusing on developing and improving internal capabilities. New learning initiatives are being introduced to reeducate employees and provide them with skills that map to current business objectives. A renewed focus on learning investments that increase employee retention is also emerging. And learning aimed at managerial leadership has become critical to an organization’s ability to foster positive change.

Although most executives intuitively know that learning can be key to change, most continue to view learning investments with some degree of skepticism. Many agree with the executives in the IBM study who said that there is clearly a causal relationship between learning and business, but positive proof is lacking. As a business enabler, learning has proven to be elusive—there is no credible way to link what you put in with what comes out.

When companies do measure, it is often after the learning has taken place, when it is too late to make changes to affect the outcome. The metrics used are mostly those that can be easily captured and quantified—attendance and reaction. This approach may tally the number of programs, number of participants, number of course days, training costs and end-of-course satisfaction ratings. But these measurements don’t capture or measure how, or even if, that learning is helping your business.

**Why learning impact is so difficult to measure**

Executives want to ensure real accountability for learning investments. Today, it is very difficult to assess the power of learning to effectively improve performance. Without this accountability, much of the opportunity to leverage a critical strategic advantage is lost. This paper introduces a new, results-focused approach to measuring and managing learning to achieve maximum impact. This IBM methodology, called Learning Effectiveness Measurement, can help you closely align learning with organizational priorities so you can realize the most potential value from your investments—and quantify that value.
Historically, learning programs have been tactical initiatives. Managing the learning process from the bottom up, rather than from the top down, almost guarantees that there will be no formal link with business value drivers. Especially without a reliable way to measure the effect that learning has on business. Despite the more than US$300 billion dollars American companies spend annually on training, for example, there is little or no data to show any positive contribution to top- or bottom-line results. In fact, most companies don’t even try to measure the impact. According to estimates from the American Society for Training and Development (ASTD) and others, only three percent of all training courses are evaluated for business results.²

### Focusing on what matters: measuring learning effectiveness

Measuring learning effectiveness means finding out whether the learning delivered the right results. In recent years, many organizations have given more attention to learning efficiency—measured by the cost of learning. While learning efficiency is a crucial consideration and affects the value you realize from learning investments, learning effectiveness is even more important. You must also be able to measure the benefits of the learning as they relate to the quality of learning content and delivery. If you’re not getting the right results, it doesn’t matter how little the learning costs.

<table>
<thead>
<tr>
<th>Level</th>
<th>0 Attendance</th>
<th>1 Reaction</th>
<th>2 Learning</th>
<th>3 Application</th>
<th>4 Business results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measuring example</td>
<td>20,000 employees completed this course</td>
<td>This course received a student rating of 4.5 out of 5</td>
<td>95% of students passed the end-of-course mastery test</td>
<td>80% of employees who completed this course are using what they learned on the job</td>
<td>This course contributed to a US$650,000 increase in revenue</td>
</tr>
</tbody>
</table>

² [Source](#)

³ [Source](#)
Statistics most often cited use a standard levels-of-learning measurement model that is familiar to learning professionals. Most current measures of learning effectiveness are limited to the first four levels of this model. Typically, these are measures of factors that might enable results, not the actual business results.

For example, you can have superb results at Level 1 ("This was the greatest course I ever attended!"), at Level 2 (scoring 100 percent on the post-test) and at Level 3 (supervisors say employees are using the new skills on the job), but still have no impact at all on business or organizational indicators (Level 4). In fact, if the wrong skills are being used, a success at Level 3 can actually be a failure at Level 4! These business impact measurements are, however, much more difficult to produce. Many executives have never even seen such a measurement. How can organizations develop the ability to measure the business results of learning investments?

**Strengthening the weakest link: making learning accountable**

At IBM, we developed the Learning Effectiveness Measurement methodology to establish causal linkages between training initiatives and business results. This methodology also makes it easy to see how learning interacts synergistically with other factors to create results. Unlike most learning measurement approaches that measure retrospectively, the IBM methodology is primarily predictive, which maximizes the potential impact of your learning investments on your objectives. This approach creates a roadmap that helps you select and navigate to your destination, as well as confirm that you have arrived.

**How it works**

The IBM methodology separates learning measurement into five phases—predictive, formative, baseline, in-process and retrospective—and focuses attention on the phases that occur earlier in the learning cycle.
Getting it right from the start: the predictive measurement phase

Predictive measurement occurs early in the learning planning cycle and helps organizations make the best learning design and investment decisions. This type of measurement asks, “What should happen?” while retrospective measurement asks, “What has already happened?” What often makes predictive measurement difficult is that the desired results are almost never clearly defined and rarely connected to the learning objectives. To bridge the gap between learning initiatives and real impact, the IBM methodology uses visual maps called causal chains.

Causal chains trace specific learning initiatives through a series of causes and effects—from skills, knowledge and attitudes to behavior, individual and team performance, organization performance and, finally, financial business results.

Causal chains help determine which indicators will have the greatest potential effect, as well as the critical factors for increasing the success of learning initiatives. Once these have been defined, the IBM methodology helps identify the most important measures to target and track.

When assisting you with this methodology, IBM works closely and iteratively with your team to define your learning-linked business objectives and to develop causal chains that provide you with much more than a visual map. We create a common language for such diverse stakeholders as learning professionals, education sponsors and business executives to develop a shared understanding of the links between learning and business, and provide reusable intellectual capital. Causal chains are dynamic and will change over time as the causal relationships identified in the beginning are verified or revised as new insights are gained.

Ensuring design is appropriate: formative measurement

Formative measurement verifies that the proposed learning is powerful enough to overcome the many barriers that might prevent it from achieving results. Even if a learning program is well-designed in the traditional sense, it faces many possible barriers that can prevent learning participation, reduce skill acquisition, impede behavior change and limit performance improvement. For example, even if employee performance improves, it might not improve organizational performance; and organizational performance improvement might not be reflected in the financial results of the organization. It all depends on the alignment between learning and results that is established through the causal chain and the end-to-end effectiveness of the learning initiative in which it results.

The focus in this phase should be on behavior change, performance improvement and business measures, rather than only learning measures. Learning design becomes more than deciding how to disseminate knowledge and develop skills, it becomes a way to measure and manage all the factors that influence desired results.
The importance of measuring before you start: baseline measurement

Without baseline data, no before-and-after comparisons can be made, and it is impossible to know if there has been any improvement. Baseline data is also critical to establishing credible learning measurement targets. And without this data, you are likely to design learning without knowing how much improvement is needed or even in what areas. Although it can be time-consuming to collect this data, failure to do so severely curtails your ability to make meaningful measurement comparisons and threatens your ability to credibly link learning with business results.

Tracking and adapting as you go: in-process measurement

Just because an intervention has been carefully designed to meet learning and performance requirements, doesn’t mean that anticipated results will be achieved. Measuring results while learning is in process makes it much more likely that you can influence outcomes. This data will provide timely feedback on how well the intervention is working, on possible problems that might require some corrective action, opportunities to further enhance the intervention or, in rare instances, discontinue it.

Making final judgments: retrospective measurement

Measuring results after learning occurs, or retrospective measurement, can be viewed as the last data point in the in-process measurement phase. The purpose of retrospective measurement is to provide final judgments about the learning, including the calculation of return on investment, if desired. Used by itself, retrospective measurement will occur too late to permit changes to be made in the existing learning initiative. Used as part of a comprehensive and systematic approach to measurement, retrospective data can help you make informed decisions about future learning investments.

The IBM methodology for Learning Effectiveness Measurement in action

IBM developed this powerful methodology as part of an enterprise learning strategy to create positive results, and our clients are the best proof. For example, the executives at one major mortgage financing company decided that a key business objective was to turn learning into a strategic driver of competitive advantage. They believed that if employees could more quickly and accurately recognize new opportunities and markets, they could help increase revenue. Learning was important to this approach, but the company discovered that its existing programs were producing little more than knowledge dissemination. Existing measurements told them how much training was delivered, how it was received by the participants and what the overall cost was. It did nothing to help define what training was needed, and it could not be linked to business results.

Working with IBM to implement the Learning Effectiveness Measurement methodology as part of its learning strategy, the company began by developing causal chains. It discovered serious gaps between training programs, employee behavior and desired results. These powerful insights led to significant changes in the company’s approach. Using this methodology, the company’s training
staff began to enthusiastically replace “training logic” with business logic. The training team was empowered to identify the critical success factors for impacting performance. It forged closer partnerships with its internal clients. It began to address factors affecting learning outcomes that were outside the traditional domain of learning, such as the pivotal role of line management in changing employee behavior. And it designed and delivered learning programs that had credible, measurable results.

For this company, high-priority training programs have become business-critical training processes, with skill-building activities that are much more relevant to jobs; support for on-the-job behavior change; and management ownership of the performance issues relating to learning. Training is being tracked with line-of-sight, in-process measures so that stakeholders can more clearly see progress toward behavior change and performance improvement targets and make realtime changes if the measures are not on track. Using the IBM methodology, the company now knows precisely what learning is needed to achieve desired outcomes, and also has the means to prove the results.

**Why IBM?**
At IBM, learning is in our DNA. It is an inherent part of our business strategy for creating positive results. We have the expertise, proven industry experience and track record to help you measure learning effectiveness. If you can measure it, you can manage it—and you can use it to improve performance.

Our comprehensive learning solutions are easily tailored to your unique environment and are designed so you can incorporate your existing technology investments. We can help you implement a complete solution or just the pieces you need as you need them. We can help you deliver learning in the most efficient way possible, anytime, anywhere, through multiple delivery options. More importantly, we understand the importance of learning effectiveness and can help you measure it before, during and after learning to help achieve organizational objectives.

**For more information**
For more information about how the IBM Learning Effectiveness Measurement methodology can help you improve business performance and create value by aligning learning with business strategy, please visit us online at:

[ibm.com/learning](http://ibm.com/learning)
About the author

Dr. Dean Spitzer, with IBM Almaden Services Research, is a leading consultant and researcher in the field of business and performance measurement. Dr. Spitzer has over 25 years experience in helping individuals and organizations achieve superior performance by integrating education, training, motivation and organizational change methodologies. Dr. Spitzer earned his Ph.D. with honors from the University of Southern California and his M.A. from Northwestern University.