Learning Analytics

Measurement Innovations to Support Talent Development

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2:45 – 3:45
How Does Learning Analytics Drive Competitive Advantage?

The Logic Model Underlying Training

- Learning Event
- Competency Development

Individual and Organizational Performance Improvement

- Does training lead to improved performance?
- Does improved performance lead to achievement of business goals?
- Does training help develop proprietary products, systems, services, etc. that lead to increased profitability?

Achieve Business Goals

How do you know?
How Does Learning Analytics Drive Competitive Advantage?

The Logic Model Underlying Training

Learning Analytics is the only tool that can determine if training is helping the business achieve its mission.
What is learning analytics to you?

Learning Analytics is the science and art of gathering, processing, interpreting and reporting data related to the efficiency, effectiveness and business impact of development programs designed to improve individual and organizational performance and inform stakeholders.
Fundamental Question: What is Measured?

What CEOs Want Learning Leaders to Measure

<table>
<thead>
<tr>
<th>Metric</th>
<th>We Currently Measure This</th>
<th>We Should Measure This</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity</td>
<td>94%</td>
<td>85%</td>
</tr>
<tr>
<td>Cost</td>
<td>78%</td>
<td>82%</td>
</tr>
<tr>
<td>Reaction</td>
<td>53%</td>
<td>61%</td>
</tr>
<tr>
<td>Learning</td>
<td>22%</td>
<td>28%</td>
</tr>
<tr>
<td>Application</td>
<td>11%</td>
<td>8%</td>
</tr>
<tr>
<td>Impact</td>
<td>8%</td>
<td>4%</td>
</tr>
<tr>
<td>ROI</td>
<td>4%</td>
<td>0%</td>
</tr>
<tr>
<td>Awards</td>
<td>40%</td>
<td>44%</td>
</tr>
</tbody>
</table>

n = 96
Source: Phillips & Phillips
Fundamental Question: Why Measure Learning?

- Determine Training Effectiveness: 76.2%
- Determine Areas for Improvement: 63.8%
- Justify the Existence of Training Programs: 34.3%
- Conduct Needs Assessment: 28.6%
- Maintain Compliance: 28.6%
- Other: 20.0%

n = 111.
Source: KnowledgeAdvisors.
How Will You Demonstrate Impact?

The two most common approaches are **Impact Studies** and **Scalable Evaluation Systems**

### Impact Studies (Consultants)

**Pro**
- Determines cause & effect
- Provides ROI information based on operational data
- Links training’s impact to the business

**Con**
- Costly
- Time consuming
- Resource intensive

### Scalable Evaluation System (Metrics That Matter™)

**Pro**
- Gathers and reports data quickly
- Provides estimates of ROI values based on validated methodology
- Links training’s impact to the business

**Con**
- Provides roughly reasonable / directionally correct data for cause & effect
Estimating Performance Improvement

Performance improvement is estimated using the ROI Institutes standard methodology. Three questions are asked: 1) estimate performance improvement, 2) estimate how much is due to training, 3) estimate how much work time relates to training. The average responses from learners are multiplied together and then adjusted downward by 35% for bias.

\[
64\% \times 59\% \times 74\% \times 65\% = 18\%
\]

Exercise: Ask room to create EIIA values for this event.
Estimating ROI with Salary and Costs

The ROI formula is based on benefits and costs associated with training. We use the performance improvement estimate (previous slide) and the average salary of learners to estimate benefits. (If training improves performance by 18% for someone whose salary is $100K, then they are $18K more productive). The estimated costs of training are used for the costs. Salary and costs can be entered as unique inputs into MTM for each class or default values can be used.

Benefits: Average salary ($100K) * 100 learners * 18% = $1.8M
Costs: $3K * 100 learners = $300K
ROI: (Benefits – Costs) / Costs = (1.8M – 300K) / 300K = 5.0
For every dollar invested, $5 will be returned beyond the invested amount.
Communicating to Stakeholders

Begin with the end in mind: What do your stakeholders want?

- Instructors
- Program Managers
- L&D Leaders
- Business Leaders
What Gets Reported To Stakeholders?

Top Five L&D Metrics Reported to Business
1. Training Expense per Employee
2. Satisfaction with Training
3. Training Hours per FTE
4. External Vendor Expense
5. L&D Cost per FTE

Top Three Business Questions for L&D
1. **Results:** To what degree will a learning program improve a specific business outcome?
2. **Value:** What will be the return on the learning investment?
3. **Application:** How can we increase application of new skills on the job?
A Model for Reporting: TDRp

Talent Development Reporting Principles (TDRp)
Based on Boudreau & Ramstad’s (2007) Model
### Summary of Metrics to Report

<table>
<thead>
<tr>
<th>Efficiency Measures</th>
<th>Effectiveness Measures</th>
<th>Outcome Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of people trained</td>
<td>Satisfaction with training</td>
<td>Increase in customer satisfaction</td>
</tr>
<tr>
<td>Number of people trained by learning methodology (elearning, instructor-led, virtual)</td>
<td>Knowledge and skills gained due to training</td>
<td>Increase in employee performance</td>
</tr>
<tr>
<td>Reach (percentage of people trained in the target population)</td>
<td>Intent to apply learning on the job</td>
<td>Decrease in risk</td>
</tr>
<tr>
<td>Cost of training per program</td>
<td>Expectation that training will improve individual performance on the job</td>
<td>Decrease in costs</td>
</tr>
<tr>
<td>Cost of training per learner</td>
<td>Expectation that individual performance improvement will lead to organizational performance improvement</td>
<td>Increase in sales</td>
</tr>
<tr>
<td>Cost of training per hour</td>
<td>Return on expectations</td>
<td>Increase in revenue</td>
</tr>
</tbody>
</table>
Client Example: Hilton Worldwide University

Analysis leveraged matched comparison groups, comparing ‘Trained Hotels’ and ‘Non-Trained Hotels’. Groups were matched by Location, Brand, and Size.

Business Goal:
Drive up revenue

Training Solution:
Revenue Management at Work

Performance Objective:
Manage price schedules actively to maximize profitability

Hypotheses:
Period of positive impact will begin the quarter after training is complete
Impact will extend for at least 6 months
Hilton Business Impact Study Results

- Market Share difference due to Revenue Management Class statistically validated – 18.3% of total increase is due to training:
  - $20M positive impact from first wave of training at 87 hotels
- Expected market shift for hotels to be trained in future: $23,112 per hotel over 12 months
- Less than 1 month payback period on training investment
- ROI of 10.6:1 $10.60 return for every $1 invested
Study Value and Actions

- **Program implementation decisions:**
  - Utilize MTM results to make go/no-go decision
  - MTM data driving improvements in courseware and delivery
  - Utilize MTM data in the promotion of programs

- **Executive engagement:**
  - *Share the story with the business to gain expanded budget*
  - *Building credibility for other training programs & importance of measurement*
  - *Increasing demand for business impact measurement*
  - *Increase in engagement of franchise members with Hilton Worldwide University*

- **Building external brand:**
  - *The story and insight from business impact study has helped them to achieve top ranking in multiple industry awards (ATD, CLO, ATD BEST, ATD Learning In Practice, Brandon Hall)*
Case Study: Learning Analytics

Current State
- Mature, long-term user of MTM
- 3-4 in-house measurement professionals interpreting and using results

Business Need
- Insight about the aspects of training that improve performance
- Recommendations for improvement

- Start with SmartSheets
- Analyze the data with MLR
- Provide recommendations
Predicting Impact and Improving Training

R-squared = 87.2%
I learned new knowledge and skills from this training.
R-squared = 1.8%
I will be able to apply the knowledge and skills learned in this class to my job.
R-squared = 0.8%
The instructor was knowledgeable about the subject.

Multiple Linear Regression
R-squared = 89.8%
Level 4 (Post Event)
This training will improve my job performance.

Level 4 Performance Improvement =  
0.66 + 0.46 (I learned new knowledge and skills from this training) +  
0.29 (I will be able to apply the knowledge and skills learned in this class to my job) +  
0.14 (The instructor was knowledgeable about the subject)

Source: CEB analysis.
## Comparison to Benchmarks

<table>
<thead>
<tr>
<th>Category</th>
<th>Item</th>
<th>Benchmark Value</th>
<th>Course Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Learning Effectiveness</strong></td>
<td>I learned new knowledge and skills from this training.</td>
<td>5.50</td>
<td>5.89</td>
</tr>
<tr>
<td><strong>Job Impact</strong></td>
<td>I will be able to apply the knowledge and skills learned in this class to my job.</td>
<td>5.57</td>
<td>4.88</td>
</tr>
<tr>
<td><strong>Instructor</strong></td>
<td>The Instructor was knowledgeable about the subject.</td>
<td>5.68</td>
<td>5.85</td>
</tr>
</tbody>
</table>
### Recommended Action

<table>
<thead>
<tr>
<th>Key Driver</th>
<th>Suggestions to improve responses to this factor</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Course Objectives</strong></td>
<td>Align the materials to the course objectives; clearly describe the objectives; provide examples of course materials, topics and objectives to help learners determine if the course is what they need. Ensure truth in advertising. If the course description indicates there will be opportunities to practice and master skills in class, then live up to the promise; provide practice and feedback periods. Do not “bait and switch”, where practice is advertised but lecture is the only learning method. Ensure opportunities to demonstrate and build knowledge and skills on the outlined course objectives—tying the activities to the objectives.</td>
</tr>
<tr>
<td><strong>Pace of the Course</strong></td>
<td>Engage the Learner by Providing a Challenging Pace—especially with web-based and other online learning, where they can review or ask questions. More often than not with training, the pace is somewhat to substantially too slow for learners. Generally, with a knowledgeable population, faster is going to be better. Images: Methodologies, process and graphs convey substantially more information in a fraction of the time than written or verbal descriptions. Emphasize the use of images rather than words. Information that is supplemented with images is also memorable for a longer period of time. Self-Directed Learning: Self-paced action and discovery (e.g., clicking various components of a methodology to learn more about it) is a better learning experience than listening to an audio description.</td>
</tr>
<tr>
<td><strong>Instructor Effectiveness</strong></td>
<td>Prepare the instructor: Preparedness for online instruction is just as important for online learning as for instructor led training. Get instructors familiar and comfortable teaching and trouble shooting in a virtual environment. Prepare the instructors to use various instructional strategies (lecture, discussion, visuals, etc.).</td>
</tr>
</tbody>
</table>

**Instructional designers use these standard recommendations to improve their courses**
So What / Call to Action

- Measure to understand effectiveness and feed the continuous improvement cycle
- Use technology to gain efficiencies in the data collection process
- Use technology (in-system analytics) to provide timely insights
- Apply advanced analytics to gain deeper insights by looking for relationships, differences or by creating predictive models

Measure  Monitor  Manage
Thank You

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