



GM's Measurement Strategy Proves Value of Training

General Motors
Best Advance in Learning Measurement
October 2017



Company Background



Company At-a-Glance	
Headquarters	Detroit, Mich., USA
Year Founded	1908 as General Motors Corporation; 2009 as General Motors Company
Revenue	\$166.4 billion USD, 2016
Employees	225,000
Global Scale	Produces vehicles in 30 countries and does business in 140 countries.
Customers/Output, etc.	An American multinational corporation that designs, manufactures, markets, and distributes vehicles and vehicle parts and sells financial services.
Industry	Automotive
Stock Symbol	NYSE: GM
Website	www.gm.com

Budget and Timeframe

Budget and Timeframe	
Overall budget	\$585,000
Number of (HR, Learning, Talent) employees involved with the implementation?	9
Number of Operations or Subject Matter Expert employees involved with the implementation?	4
Number of contractors involved with implementation	5
Timeframe to implement	August 2015 – December 2016
Start date of the program	December 2015

Business Conditions & Business Needs

General Motors' Center of Learning (CoL) is responsible for the professional development of 150,000 employees at GM's 3,200-plus U.S.-based dealerships. Additionally, CoL has the same responsibility for GM's wholesale field force with \cong 800 employees who directly support the sales and service sides of the business in dealerships.

Dealers are the face of GM, and GM only makes money when dealers sell GM products. Thus, a trained and proficient retail and wholesale workforce drives GM's profitability.

Although GM and dealers financially support training, CoL faced the constant challenge of proving the effectiveness and impact of training. CoL leaders knew that having an evidence-based training design would facilitate the annual corporate budgeting process and improve stakeholder engagement in the design of new training.

Thus, in late 2015, CoL with its training partner GP Strategies began making a concerted effort to align training measurements with the business unit being served to demonstrate the value training brought to the company. The two teams developed a robust measurement strategy to support their learning strategy with the intent of both proving and improving the quality of learning.

Overview

CoL's robust measurement strategy included a "Statement of Intent" with the following goals:

- Use learning and performance analytics to continuously improve the quality and relevance of the training it provides to its retail and wholesale field audiences.
- Build a culture that incorporates measurement thinking and evidence-based practices into all activities and training.

To establish a framework for the measurement strategy, CoL built on well-known models presented by Kirkpatrick, Phillips, and others. The CoL team explicitly added "Business Alignment" at the intake of every project and expanded the traditional "Levels" by adding "Optimization" to push rigorous analysis into the predictive analytics space to help identify ways to improve the impact training services.

Figure 1: Measurement Strategy Framework

Phase	Description	Level	Purpose
Alignment	Business Alignment		Are we aligned?
Efficiency	Operational	Level 0	How much did we deliver?
Effectiveness	Reaction	Level 1	Do they like it?
	Learning Gain	Level 2	Did they learn it?
Job Impact	Behavior Change	Level 3	Can they do it?
Business Impact	Business Results	Level 4	Is it making a difference?
	ROI	Level 5	What's the return?
	Optimization	Level 6	How can we improve it?

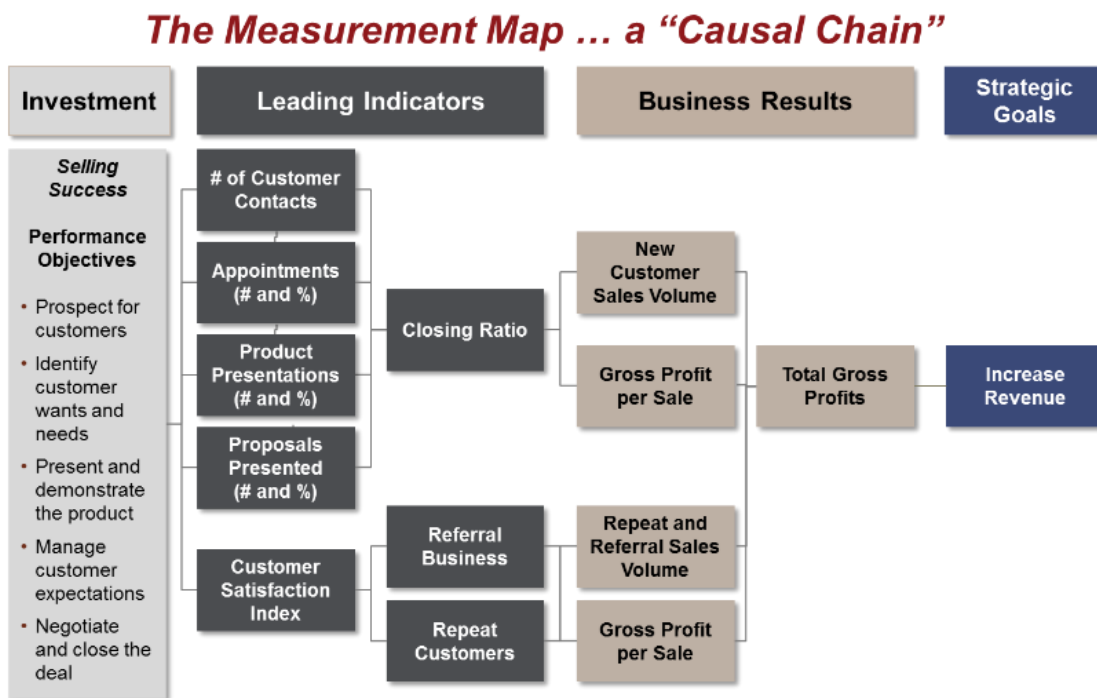
Source: GM 2017

Measurement quickly became an integral part of every learning project. Today, when a learning need is identified, the project team must complete a "Project Intake" form that addresses both alignment and the level of measurement to pursue. In collaboration with business stakeholders, the project team defines the business goal the initiative is supporting as well as current and desired states for business outcome measures and

performance indicators. They further specify the desired levels of measurement for the project. In this early scoping discussion, team members evaluate costs and benefits of each level in relationship to the visibility, scope, and expected impact of the project. High visibility/high impact projects get slated for Level 3 and above.

Where higher levels of measurement are desired, the team engages CoL and GP measurement specialists to build a project-specific measurement plan, including a Measurement Map. The maps are co-created with the business stakeholders, engaging them in defining key metrics and desired outcomes. Such co-creation activity secures stakeholder buy-in on expected outcomes of an initiative and engages them in securing the business data necessary to truly measure outcomes. A simple measurement map is provided below.

Figure 2: Measurement Map



Source: GM 2017

Combined, the project intake and measurement mapping specifically address the first phase of measurement known as alignment, demonstrating to stakeholders that CoL's offerings are directly tied to organizational objectives.

Design of the Program

The CoL team understood that different metrics are wanted by different audiences, from GM executives and dealers to training managers, from trainers to instructional designers, from project managers to training administrators. The measurement model had to accommodate all audiences and all levels of measurement. A foundational requirement was to have a robust data collection and reporting system in place to ensure that efficiency and effectiveness metrics were well in hand. First, efficiency and effectiveness key performance indicators (KPIs) were defined and standardized, including three versions of the Level 1 survey (web-based, virtual classroom, live). Then monthly, quarterly, and annual reports and dashboards were designed to provide the right level of detail to the right audiences inside CoL and among stakeholders. Today, dashboards include either monthly or quarterly trends for each metric and report up to three years of history to help visualize changes in KPIs. Metrics from Level 0 to Level 4 are included on dashboards.

The standard metrics are used by CoL, and many of those metrics are part of the Service Level Agreement between CoL and GP Strategies. In addition, other data can be captured and reported on an ad hoc basis to respond to specific inquiries.

Efficiency/Operational Metrics (Level 0)

- Size of population served (# of dealerships, # of students in key job roles).
- # of courses developed/retired by month.
- Average age of active courses.
- # of completions by modality.
- Total hours of training completed by modality.
- Average duration of WBT training – total catalog and courses launched per quarter.
- Development time by modality.
- # of inbound calls to Dealer Training Hotline per quarter.
- # of unique students completing training by modality.
- # of live training sessions conducted.
- Average # of students/live training session.
- Trainer productivity, meaning % of time on direct training activities.

Effectiveness/Reaction Metrics (Level 1)

- Relevance/application (several questions).
- Design (several questions).
- Delivery (several questions).
- Trainer (several questions, if applicable).
- Overall score.
- Application (open-ended).
- Improvement (open-ended).

Overall Level 1 scores by curriculum are reported on the quarterly dashboard, and training managers receive a monthly detailed Level 1 report. Courses scoring less than 4.5 out of five on any question are flagged for further research and discussion for possible improvement. The CoL team also seeks to get a more complete view of student satisfaction by converting the scoring to a Promoter Score, which is fashioned after Fred Reichheld's Net Promoter Score methodology made popular by Bain & Co.

Effectiveness/Learning Gain (Level 2)

In cooperation with GP Strategies, CoL developed a Testing Strategy that defines the types of tests CoL will support, a description of when to use each and criteria for developing the selected type of test. Criteria include question structure standards, threshold score guidelines, and remediation and feedback requirements. These standards allow CoL to adeptly utilize the right test for the right purpose. Types of testing are:

- Knowledge check.
- Quiz.
- Test.
- Test Out.
- Mastery.

A quality check incorporated into the Testing Strategy calls for an Item Analysis of any new test regardless of the type of test employed. This analysis provides the team with a critical quality check into the accuracy of the test and answer grid and assures the test aligns to the content being taught. If needed, the team corrects the test/answer grid or refines the test/content to ensure the test is a valid measure of knowledge gains.

Job Impact/Behavior Change (Level 3)

If the discussion by CoL and the business stakeholders determines the initiative warrants a Level 3 evaluation, they create a specific measurement plan that outlines the metrics and the methodology to be employed.

To date, CoL has used the following data collection methods:

- Self-reported via survey.
- Manager-reported via survey.
- Mystery Shop regularly reported on the quarterly dashboard.
- Observation by proctor.

Business Impact/Business Results (Level 4 and beyond)

As with Level 3, a Level 4 analysis is determined at the outset. A robust measurement plan with a measurement map is created. CoL has plans for four to six of these assessments annually, with varying degrees of rigor. A measurement plan outlines the following:

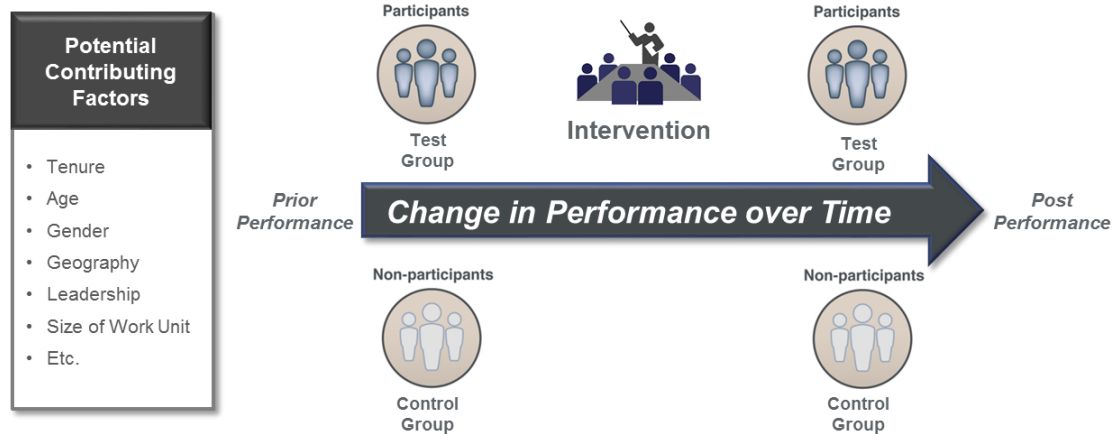
- Purpose.
- Description of the initiative.
- Study population.
- Time parameters.
- Hypotheses.
- Metrics to be evaluated.
- Segmentation factors to be evaluated.
- Data pull requirements.

The more robust impact and optimization studies involve statistical analysis with test and control groups following a quasi-experimental design. Any such analysis involves merging business data with people and training data, further cementing the alignment of training to organizational business goals.

Designed in conjunction with business stakeholders, these business impact studies especially interest CoL and the business alike. At the outset, all parties are reminded that the intent of this type of measurement is to both prove and improve the quality of CoL's offerings. By establishing the benefits of using measurement to improve future trainings,

CoL has been able to defuse the anxiety often felt around business impact studies where both the learning organization and the business stakeholders may worry about the possibility of unfavorable findings.

Figure 3: Quasi-Experimental Design



Source: GM 2017

Delivery of the Program

Implementing a measurement model was not just one thing. Measurement is pervasive and touches virtually everyone at CoL, GM businesses and student stakeholders. Measurement also requires resources, and CoL made it clear that measurement was a strategic priority with staffing at 3 FTEs.

Alignment

Alignment begins at project intake where business outcomes and performance indicators are determined. The CoL/GP Strategies teams collaborated on the Project Intake form, which went through several iterations. The form proved to be just the start of the process. Next, all CoL's training managers and GP's instructional designers and project managers needed training on how to use the form.

The challenge was not about filling out the form but on having business discussions with stakeholders around desired outcomes. Most stakeholders were used to simply requesting a course and never thought much about training in such detail. A skill gap uncovered among CoL/GP team members was addressed by implementing a series of workshops focused on how to be a "Performance Consultant."

Level 0

Many of the identified operational metrics were new to CoL. In some cases, new data collection methods had to be developed and new reports created. The effort culminated in the creation of three key reports that are actively used by training managers to run CoL's business.

The first is the "Monthly Level 1 WBT Report," which lists every active course with its overall Level 1 score and the scores for each question. Courses scoring less than 4.5 out of five on any question are flagged for further research and discussion. To ensure accountability, results are reported by training manager and reviewed at monthly meetings.

The second key report reflects live training and trainer activity. Each month, it reports Level 1 results by trainer, trainer productivity, and students per session. The last two metrics help CoL optimize the use of valuable live trainer resources.

The third report, the Operations Dashboard, provides senior leaders with quarterly trends over the past two to three years across all the operational metrics. CoL's leadership team convenes quarterly to review, discuss, and share ideas based on the learnings from the quarter.

Level 1

CoL responsibility focuses on U.S. non-technical training. To facilitate comparative reporting across GM's retail training operations around the world, GM's Global Learning Network, chaired by CoL, wanted to deploy a standard Level 1 survey. A three-month global collaborative effort yielded three standard Level 1 surveys (web, virtual classroom, live) across GM's seven regions.

Within the United States, eLearning project teams deploy a pilot survey for new courses to gather rapid feedback on any technical issues. Post-pilot, the team monitors the Level 1 survey results monthly, keeping an eye on low-scoring courses and those approaching a stable threshold.

CoL team members had turned off a survey only after determining that a course is stable and results are unlikely to change. In fact, a quick analysis by CoL revealed that as much as 11 man-years of participants' time was spent annually responding to surveys no one was reviewing any longer. Therefore, the team set a threshold of 500 completed surveys, at which point the survey gets turned off. With up to 35,000 students in a single role, this

policy eliminated thousands of unneeded surveys. Surveys can easily be turned back on for a periodic read of the student satisfaction with the course.

Level 2

CoL implemented the Testing Strategy in mid-2016. Training managers and business stakeholders now recognize that, if they want a test-out, they need to apply more rigor to test development. More rigorous tests require enhanced test-writing skills, so workshops have been provided to instructional designers to enable them to author good tests.

In one high-stakes situation, the training team called on the GP measurement team to run a two-day workshop for subject matter experts to develop an Angoff-based cut score. The resulting test, further validated and endorsed by GM's human resources, serves as input to job promotion opportunities.

Level 3

CoL recognizes the value – and the difficulty – of collecting Level 3 observation data. As a proxy for proctored observation, the team leverages Mystery Shop and customer satisfaction survey data on sales consultant performance. Through a close working relationship with GM's Global Connected Customer Experience team, CoL has ready access to GM's Mystery Shop and customer satisfaction results.

CoL regularly evaluates the data as it relates to specific behaviors that can be influenced by training. By observing trend data on two areas, "knowledgeable about the product" and "offers a test drive," CoL detected a steady decline in the latter. This knowledge led to a special "test drive" module for GM's product trainers to use as part of every in-dealership training session. CoL will continue to track this metric to determine impact.

On select initiatives, CoL has invested in two other types of Level 3 implementations: proctored observation and self- and manager-reported behaviors via surveys. Of particular note is GM's Master Certified Technology Expert qualification, which required such a degree of hands-on proficiency that trained observers/proctors were needed. After training to ensure inter-rater reliability, these proctors schedule an in-vehicle test with the candidate, and they go into dealerships playing the role of customer while the candidate teaches them how to sync their phone, program the navigation system, utilize rear-seat entertainment systems and so on.

An Online Assessment component has been added this year to ensure candidates have the ability to actually troubleshoot common customer technology questions and issues

across all vehicle models. This mastery program directly supports GM's focus on improving the customer experience with in-vehicle technology and will ideally improve J.D. Power quality scores.

Level 4 and Beyond

By adopting the Measurement Mapping technique, business stakeholders understand how training can, through a causal chain of performance indicators, be linked to ultimate business outcomes. By using the quasi-experimental design, pre- and post-training performance can be compared between naturally occurring test groups and control groups.

By factoring in other influences, a statistical model can identify if, how much, and how certain an effect of training may be. A recent study evaluated a high-visibility, five-city "Ride and Drive" event where more than 3,000 salespeople got to drive Chevrolet products against the competition on closed tracks. The study showed that attendees had a 3% to 7% improvement in sales over non-attendees. It also spotlighted that attendees who also participated in-dealership training were at the higher end of the improvement scale. This finding reinforced the need for sustained training, even after a big event.

Other Level 4 analyses utilize descriptive statistics to observe movements in metrics before and after training. For example, GM had an executive mandate to increase sales to women. CoL played a role as part of a holistic GM effort by producing a series of web courses focused on selling to women. Registrations to women did go up after the training, but isolating the effects of training amid so much other corporate energy on the topic would have been extremely difficult. The descriptive statistics illustrated that, overall, the corporate initiative worked.

Change Management Efforts

Several of the challenges in implementing the measurement strategy already have been mentioned. This section specifically mentions some of them, again by each element of the strategy. The following list illustrates the nature of the challenge encountered and overcome.

Alignment

Obtaining business outcomes and performance indicators from stakeholders proved challenging. Most stakeholders were accustomed to simply requesting a course and had never really thought about training in terms of outcomes. The CoL/GP team recognized a skill gap among training managers, instructional designers, and project managers in

having business discussions with stakeholders. This knowledge led to a series of workshops on being a “Performance Consultant.” Receptivity has been high, as everyone truly wants to develop training that matters!

Level 0

With many of the operational metrics new to CoL, some were met with resistance because individuals were not used to being measured or held accountable. However, CoL’s leader kept reiterating “measurement to improve,” and people began seeing the value in knowing how things were going. Importantly, there were no negative consequences from “low scores.” Rather, everyone used results to uncover issues, explore root causes, and make improvements.

Level 1

Two consensus-building challenges faced CoL in the drive for a standardized Level 1 evaluation across GM’s seven global regions:

- Gaining agreement on the survey items.
- Determining what scale to use.

Each region had its own version of a survey, and many people reported frustration that results were not actionable. However, developing a single survey for the world proved to be a time-consuming but worthwhile endeavor. Now all GM’s retail training regions use the same Level 1 surveys (WBT, virtual classroom, live), making comparative reporting possible for the first time.

Determining the scale for the survey also required collaboration because there were advocates for both 5- and 7-point scales. CoL was leaning toward the 7-point scale to increase variation in results; others did not want to change their current 5-point scale and lose comparability with prior results. The team ran a pilot using the two scales. After significant statistical analysis, the anticipated variability on the 7-point scale did not pan out. Thus, CoL adopted a 5-point scale for post-training Level 1 surveys. However, CoL has adopted the 7-point scale for other survey levels and has seen the anticipated variability.

Administration of the live training survey represented a third challenge. Prior methods tended to be hindered by one or more the following problems:

- Insufficient response rates.
- Delayed responses.

- Administrative burden on trainers.

As a result, the survey data was not very useful. To remedy the problem, CoL implemented a mobile-enabled survey. Trainers provide students with a QR code (Quick Response code, similar to a bar code), and students are able to respond anonymously at the end of training.

Results are automatically tabulated and available to instructors to review online. Now trainers can teach in the morning, get feedback, and make adjustments for the afternoon. Monthly response rates are running at nearly 50% – a 600% improvement over prior methods. Trainers no longer view Level 1 as a way for corporate to evaluate them; rather they see it as “measurement to improve.”

Level 2

Students like test-outs, and business stakeholders see the value in freeing students from taking unneeded training. However, in accordance with CoL’s Testing Strategy, the test-outs must be legitimate tests of knowledge, so more time is spent on writing and validating tests. Initially, there was push-back to spending the time and effort on writing a good test. With explanation of the rationale of a test-out and the value of a good test, much of the push-back has disappeared. Workshops have been provided to instructional designers to enable them to author better tests.

Level 3

CoL faced two specific challenges regarding Level 3 implementation.

- Concern that self-reported behavior change would yield biased results, a strong possibility in any self-reported assessment. But the CoL team felt that even biased data was better than no data. While results may be inflated, they at least are directionally sound and comparable over time. To temper the desire to have “hard numbers,” open-ended comments are included in such surveys, allowing a richer and perhaps more accurate interpretation of behavior change. A recent investment in textual analytics software has enabled CoL to efficiently code, categorize and make sense of open-ended data from its 100,000+ students.
- The cost of training and deploying proctors to verify the performance of Master Certified Technology Expert candidates. Ideally each of GM’s 3,200-plus dealerships would have an MCTE, however the cost and logistics are proving challenging. As an alternative, CoL is exploring the use of video technology

solutions, where candidates would film themselves and post the video for review and rating by a small group of proctors. CoL plans to pilot video proof in 2017.

Level 4

CoL's challenge with measuring business impact is likely common among many learning organizations: Getting the data. While internal data owners typically are happy to share, CoL's data requests often fall to the bottom of the list as other areas of the business are served first.

To overcome such delays, the CoL team is building strong relationships with business stakeholders, so future data requests will be sanctioned by the stakeholders and, thus, get higher priority. After all, the stakeholder helped build the measurement map and is anxious to see the results, so it is in his or her best interest to facilitate acquisition of the needed data.

Measurable Benefits

CoL's measurement strategy lives up to its "Statement of Intent:"

- GM Center of Learning will use learning and performance analytics to continuously improve the quality and relevance of training provided to its retail and wholesale audiences.
- The GM Center of Learning will build a culture that incorporates measurement thinking and evidence-based practices into all it does.

By adopting the strategy, CoL has been able to align its initiatives to GM's business objectives in measurable ways. And stakeholders are taking notice.

Annually, CoL conducts two surveys – one of business stakeholders and one of learners. The surveys include a Net Promoter Score question fashioned after Fred Reichheld's methodology (Bain & Co.). In 2016, business stakeholders rated CoL at 45.6, up from 22.2 in 2015 and prior to implementing the measurement strategy.

In 2016, learners at dealerships rated CoL at 50. When CoL wanted to know what the scores meant, the team looked at Customer Gauge, which rated Harvard Business School at 41 and Wharton School of Business a 51. CoL continues to challenge itself by setting its sights on a best-in-class NPS rating of 75.

In 2017, CoL earned a ranking of 62 on the Training Top 125, which requires robust alignment and measurement across all aspects of the learning organization. Achieving

such external validation in CoL's first year applying provides another indication of the success of the measurement strategy.

Perhaps the real measures of success are the measurable results of programs, including:

- A customer service program for Chevrolet contributed to the brand's NPS rising an impressive 8 points, from 56 in April 2015 to 64 in June 2016.
- A customer insights program focused on enhancing the dealership experience for women helped GM increase its registrations to women by 29%.
- A "Jump Start Kit" for newly hired sales consultants is contributing to the retention of nearly 1,000 sales people a year.
- Training on GM's online dealer contact tool increased usage by 132% and the quality of entries by 21%.
- Training on GM's mobile sales support app for sales consultants helped increase usage by 12%.
- Using games for learning in the GMC Acadia product training contributed to an increase in sales of 20% the month after the training launched.
- A six-month district manager new hire learning journey reduced the time to proficiency by eight months for a 60% ROI.

Many of the above programs required customized measurement plans to define exactly how to measure success. Without a measurement strategy, CoL's training may not have been explicitly aligned with organizational goals. Without a staffed measurement team, CoL would not have had the skills to analyze and quantify these results.

The above are clearly success metrics. Other metrics, many derived from customized measurement plans, show opportunities for improvement. By having the data – both quantitative and qualitative – CoL uses measurement to prioritize decisions about current and future learning investments.

Overall

CoL's measurement strategy produced processes and standards that make measurement part of the culture and an integral part of operations:

- Defining measurement at intake.
- Formalizing metrics with measurement maps.

- Standardized Level 1 evaluations around the world.
- Automated real-time evaluations for live training.
- Testing standards.
- Guidelines for allocating resources to Level 3 and 4 measurements.
- A mentality of “Measurement to prove AND measurement to IMPROVE.”

Measurement is not easy, and CoL learned its share of lessons, such as:

- Ask the tough questions but don't attempt serious measurement if you are afraid of what you might find.
- Build good relationships with data owners.
- Have the right skill sets and people dedicated to measurement.
- Seek out technologies to can help.
- If open-ended questions are asked, analyze the responses.
- It's ok to measure to prove.
- The real power of measurement is to improve.

So where next with measurement? CoL sees three categories of opportunities on the horizon:

1. Data

- Continue to build relationships internally at GM to gain access to data and GM analysts who can help with CoL's bigger analytics projects.
- Build a global learning data warehouse to facilitate consistency and reporting across GM's regions of the world.
- 2017 plans call for leveraging individual student performance data to drive personalized training paths.

2. Reporting

- CoL is about to implement Oracle's Business Intelligence software, and the measurement team will be lead architects of new reports.



- Most current reports are LMS- or Excel-based. CoL aspires to move to interactive dashboards with “drill-down” capability to better analyze data and find opportunities, putting the power of data into the hands of the entire CoL team.

3. Technologies

- What new technologies can be exploited for training and measurement? Can CoL leverage technology for expanded Level 3 reach?
- What opportunities does xAPI hold? How could CoL capture this sort of data and integrate it into analyzes to better understand learning consumption and effectiveness?



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