



Demand Better Instructional PM Learning Objectives

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Introduction

In recent articles we have discussed the need for *Closing the Gap Between PM Training and PM Performance*, and the difference between knowing and performing. These topics may appear to be oriented more towards Managers and HR specialists than towards Project and Program Managers (PM), **but they are key for PM as well**. After all, if your team and team leads **cannot or do not perform, they damage your results, too**. We have explored the difference between training and learning, between knowledge acquisition and true PM Performance, and assert that most real learning does not really happen in the classroom, but in the workplace environment, as classroom exposure turns to applied learning. Consistently, one boon to learning is the use of clear, appropriate Learning Objectives, for all learning experiences.

Some classes and workshops to which you send your Project Managers and project teams have *great Learning Objectives*, that tell you exactly what your talent should be able to do, given that they actually apply the content within that two to six week half-life of newly-acquired, but not-yet-applied knowledge). By the way, that is one reason why some classes that Managers send their PM talent to **have no beneficial impact** on project success. Some workshops have Learning Objectives that are weak, or very weak. And some workshop vendors merely post their lecture topics; perhaps that is the best testimony they can give for their lack of savvy about true learning and development.

We continue our initiative to improve PM Competence, Performance, and your learning Return on Investment. In this article we suggest workshop development, evaluation, and measurement with Learning Objectives that are useful for a range of purposes. Those include being a foundation for Instructional Design for adult learning, a basis for scope measurement of a learning experience, and for evaluation of the effectiveness of the learning **and its on-the-job application**.

About Learning Objectives

What: A Learning Objective, also called a Performance Objective, identifies *what a learner should be able to do*, upon completion of a learning event. It may also include conditions, and criterion for measuring performance. This document omits several important aspects of good Learning Objectives, focusing more on aspects that help in measurement and evaluation. See <http://www2.gsu.edu/~mstmbs/CrsTools/Magerobj.html> for more classic, commonly-accepted guidance.

Why/Who: Different people use Learning Objectives for different reasons:

- Learners use them to decide if the learning experience will meet their needs; thus, good Learning Objectives are an effective marketing tool.
- Managers or funders use them to evaluate whether the learning experience is worth its cost (including the opportunity cost of lost time). They want to assure that the specified performances will occur on the job, not just in the classroom.
- Instructional Designers use them to communicate the purposes of the learning experience, and in most cases, to prioritize the most important portions, and thus the classroom time per topic, working with Managers or funders.
- Workshop Developers use them to design the flow of the learning, and to drive the learning interventions needed to meet the objectives. Reviewers use them to assure that the resulting learning meets the intended targets.
- Performance Analysts use them as part of assessing on-the-job performance, and evaluating the progress and/or success of any learning intervention. In this case, the Learning Objectives/Performance Objectives relationship is clear.
- For Training or Learning organizations, some of your competitors may even use them to evaluate your learning offerings against their own, to help determine how to successfully compete with you.

When: Use good Learning Objectives during learning design; content prioritization; estimating development and delivery time; evaluating alternatives; market positioning and sales; workshop startup (to manage expectations); topic evaluation; post-learning evaluation of the learning experience; post-learning evaluation of the learner's application of the workshop, and finally, when fine-tuning the post workshop Competence Development Plan to continue improvements.

Where: Learning Objectives are location-neutral; the same measures are useful in online vs. facilitator-led, co-located versus virtual, one culture, versus multi-cultural or multi-national. Of course, the methods of instruction will vary in each of these cases; the Learning Objectives stay the same.

How: Given the above information, *How* to write, evaluate, and/or improve a useful Learning Objective is the purpose of the rest of this article. To write a useful Learning Objective, write a sentence that identifies what the participants will be able to do after the learning experience. Begin with a verb, followed by a noun phrase, with adjectives and other words added to give clarity. Follow with the words needed to provide context, amplitude, measurement and/or performance. Often that can include an additional noun/verb phrase.

Example:

Write a meaningful Learning Objective that identifies what the Learner will be able to do after the class.

Verb

Noun phrase

Measure or performance

Writing or Evaluating Learning Objectives: Categorizing the Verb

The ASK Model: Classic learning design uses the ASK model (also known as the KSA model) to evaluate learning, and identify interventions. The letters stand for Knowledge, Skill, and Attitudes. Each part (or objective) of a learning experience can affect one or more of these measurable attributes. Let's take a simple example: You begin with an implied statement, "upon completion of this session, the participant will be able to:" *Identify the five Units of the aPRO Assessment model.* Does that statement reflect knowledge, skill, or attitude? You probably responded, *knowledge*. Note: *aPRO* is *asapm's* Performance Rated Organization standard, a PM organizational assessment standard for the USA. Learn about *aPRO* at: apro.asapm.org.

Good! Then, how about this Learning Objective: *Complete an assessment interview, recording the results on the aPRO information collection form.* Which ASK attribute is this? Here you probably said *skill*. But, we cheated: In addition to the leading verb *Complete*, we added the gerund *recording*. That may mean there are two parts to learn, making this a more-complex Learning Objective.

What would an *attitude* statement look like? Attitudes are useful indicators of whether the learner is likely to apply the learning in their job. Attitudes can be more difficult to evaluate because they often pair a skill or knowledge statement with an attitude statement. *Example: Reflect why the aPRO model offers an advantage for both professional assessors and their customers or clients, compared to other options.* Other attitude verbs, in addition to *reflect*, might include *acquire*, *exemplify* or *realize*.

ProjectExperts uses this ASK model in Learning analysis, design and development, and also in our PM Competence Model, establishing Knowledge, Skill and Attitudes as the first three levels of the ladder moving to PM Performance Competence. The result: There is clear continuity and connectivity between classroom learning and measurably improved individual *and organizational* PM Performance. Is that not what you seek in the first place?



Revisiting Bloom's Taxonomy: Bloom's landmark work was published in the 1950s, and for over 50 years was the foundation for effective child learning. Its 2001¹ update made it excellent for adult learners. Bloom identifies the relationship between the choice of verb and one of six increasingly abstract levels of knowledge. The six levels are: Remember, Understand, Apply, Analyze, Evaluate, and Create (see below).

While these are considered to be levels of knowledge, at the top three levels they begin to "feel" more like skill, and perhaps beyond. Bloom's work identified three different types of learning: Cognitive, Affective (interpersonal skills), and Psychomotor. We focus on the Cognitive areas (we have found them to work very well for most of the Affective learning, too). And what is Bloom's relevance for our model? The higher the verb on the six-level scale, the more intense the learning, and the more time and variety of learning interventions needed to deliver it. Thus, detecting is harder than identifying; integrating harder than clarifying. Which is harder: Contrasting or discriminating?



Why the Verb is Important. The verb identifies the action. What the learner *should be able to do*. The verb drives the learning design, and even helps identify the extent that exercises, discussions, role plays or simulations are needed. Classic *talking head* training, where the facilitator talks, learners take notes, and comprehension is demonstrated in tests, is at the lower, basic knowledge end of the ASK model. It also sits at the low end of Bloom's six levels. Perhaps it is good enough for an orientation training, but no contribution whatsoever to improved PM performance. Especially because of that afore-mentioned half-life of knowledge not applied: **Two-to-six weeks** (depending on the source cited).

Cognitive Learning Levels, Their Verbs, and Actions Demonstrated at Each Level

Use the table below to evaluate the verbs in Learning Objectives. In the left column are the key Bloom's Taxonomy categories, followed by a partial sample of the verbs for each cognitive level.

| Cognitive Dimension | Nature of the Learning Objective Verb |
|--|--|
| 1. Remember recognize, identify, describe, recall, retrieve, list, repeat, name | <ul style="list-style-type: none"> • observation and recall of information • knowledge of dates, events, places • knowledge of major ideas |
| 2. Understand interpret, classify, categorize, summarize, discuss, compare, contrast, explain | <ul style="list-style-type: none"> • demonstrate an understanding of the information • grasp meaning; translate knowledge into new context • interpret facts, compare, contrast • order, group, infer causes; predict consequences |
| 3. Apply execute, implement, use, illustrate, demonstrate | <ul style="list-style-type: none"> • use information, or organize parts • use methods, concepts, theories in new situations • solve work problems using the new skills or knowledge |
| 4. Analyze and Evaluate differentiate, organize, integrate, deconstruct, monitor, check, prepare | <ul style="list-style-type: none"> • seeing patterns, recognition of hidden meanings • identification of components • generalize from given facts; predict, draw conclusions • relate knowledge from several areas |
| 5. Create generate, hypothesize, plan, design, produce, construct, estimate, complete | <ul style="list-style-type: none"> • compare and discriminate between ideas • assess value of theories, presentations • make choices based on reasoned argument • verify value of evidence; recognize subjectivity |

The table is based on our adaptation of the 2001 update of Bloom's Taxonomy, rather than the original work. In classroom training, it may be difficult to assess or validate grasp beyond level 2 or 3. Even delivering Level 2 usually requires a topical exercise or case study application of each Learning Objective, which is why the model allows for entry of Exercises. Note also that we have combined levels 4 and 5 from the Bloom 2 (our shorthand for the 2001 version) analysis, because our experience using them shows they are similar.

Understanding the Noun Phrases

Scope Measure: The role of the noun phrase, or *objects to learn* (as we also call them) is to help identify the Scope of each learning experience. If you have clear nouns in your Learning Objectives, you have an excellent measure of the scope of the effort needed to create the learning experience, **and** of the effort needed to actually experience it.

So, as alluded to above, that scope measure is useful for estimating the time to develop the learning, and the time to deliver it. Some Learning Objectives have multiple nouns. Part of understanding the Scope of learning is the number and level of abstraction of the nouns or learning objects to cover. Of course, those nouns must be similar or related in some way, or they should be part of a different Learning Objective.

Level of Abstraction: Learning Objective abstraction reflects whether the noun is a simple, concrete fact, or reflects high concept (or is somewhere between). A single Learning Objective could either relate to one fact, to one formula, to a multi-step process, or to a manifesto for improved PM performance.

Examples:

- Identify the ratification date of the US Constitution (low abstractness, or Concrete).
- Explain the major tenets of the US Constitution (high abstractness, or Conceptual).

The reader will note that we cheated again; the second example has a higher-scoring verb than the first. Regardless, the second example, involving a higher level of abstraction, is a more-difficult Learning Objective for which to develop content; to deliver, and to measure or assess. A simple workshop may be filled with concrete nouns or subjects; however, some learning requirements are very conceptual or abstract.

Bringing together Scope and Level of Abstraction: Use the table below as a guide to determine the Complexity Rating of any Learning Objective, based on the number of noun phrases or objects to learn (Scope), and their level of Abstraction. We call the outcome a Complexity rating. This may look familiar to those who have seen similar tables in software estimating. In fact, we have used this approach to estimate the development of software, satellites, and course development and delivery for contract proposals for over 25 years.

| Complexity Rating Guide | | | |
|--|-------------------------------------|-----------|-------------------|
| Number of Nouns or Learning Objects (at right), vs. their Level of Abstraction (below) | Number of Nouns or Objects to Learn | | |
| | Total < 3 | Total < 7 | Total 7+ |
| Low (Concrete) | Simple | Average | Complex |
| High (Conceptual) | Average | Complex | High risk! |

Complexity Cautions: If a Learning Objective exceeds the guideline counts above, or falls into the high risk area, you should reduce the complexity by breaking it into multiple Learning Objectives. The Noun or noun phrase is a measure of complexity. But, it is usually better to identify complexity *and eliminate it*, rather than just measure it. In evaluating the *Objects to Learn*, beware of phrases like "for each", as in, "Identify the key deliverables for each phase of the life cycle", as these are compounding statements.

Or, one that appeared on a Request for Proposal for training development that we bid on, "Identify the key deliverables for each project role, for each phase of the life cycle." In preparing our bid, we pointed out the exponential problems with this objective, clarified the intent, and broke it into multiple learning objectives. We won the contract, but in cases like this we'd rather no-bid than deliver an immeasurable result.

A Bit of Practice

At this time, a group of volunteers from all over the World are beginning work to adapt an existing five-week Project Management curriculum for web-based use by IPMA Members, Member Associations, and most importantly, Government officials and project managers from emerging nations that soon will be IPMA members. Part of this project will be to evaluate the existing Learning Objectives, both for their accuracy, compared to what the curriculum delivers, and for the difficulty of adapting them (and the resulting curriculum) to the special strengths of the IPMA Family approach. This approach includes such hard to measure strengths as the impact of Behavioral or Interpersonal Skills upon project success, and the importance of relating effectively to the *Context of the Permanent Organization* that the project or program leverages and affects.

This PM curriculum was a massive project when it was first developed, and it has already benefited many; yet, we'd bet you can apply what we discussed above to improve the following Learning Objectives. Note that we begin with easy ones, and get more complex. And, it is fine to state that an objective is fine as-is.

- Describe what is meant by a project, project management, the project life cycle, and a systematic process of project management.
- Given a project analysis report, analyze its content and, using a worksheet, summarize the key parameters of a project, including objectives, deliverables, budget, schedule, and organizational relationships.

- C. Formulate, in writing, guidelines for deciding under what conditions the project manager should bring to management's attention significant changes in assumptions about the project or its environment that might adversely affect project implementation or project outcomes.
(The above three Learning Objectives were just from the first module of the five week curriculum.)
- D. Name the six "feasibilities" and describe each one.
- E. Recommend a revised project charter, if appropriate, that describes the project's organizational structure and the roles and responsibilities of the project manager, project staff, project management core team, and functional departments.
- F. Define teambuilding and describe four basic elements of teambuilding.
- G. Match these terms with their definitions:
- a. control period
 - b. component
 - c. decision gate
 - d. deliverable
 - e. end item
 - f. life cycle
 - g. milestone
 - h. objective
 - i. product structure
 - j. process structure
 - k. scope.

A Bit of Common Sense

How did you do? Which Learning Objectives need work? How would you improve them? In this PM curriculum, we have noted some modules (most are 3.5-4 hours) that had a dozen or more Learning Objectives. Might there be a risk of Learner overload? Probably! Here we use another rule, 7+/-2. Its use: Limit the number of Learning Objectives for a class session to that range, to maximize retention. And ideally, after the class, provide 4x the amount of class time to practice the learning in the real world before presenting another module.

Extending the theme of "common sense", in case you have missed a key implication in what we have said above. **Learning Objectives are the Requirements for any learning experience.** You wouldn't plan and execute a project without good Requirements, would you? You wouldn't consider the Requirements to be unnecessary, bureaucratic overhead, would you? You wouldn't try to measure the scope of a project without Requirements, would you? This insight may help those who, to this point in this article object to the fuss we make over useful, measurable, accurate Learning Objectives.

Below is an analysis of the above objectives, using a workshop development and delivery estimating model. ProjectExperts has used this toolⁱⁱ (originally developed in VisiCalc) for over 26 years. Interestingly, the only changes we needed to make as we moved from Instructor-led training, to Video-based training, to Web-based training, has been to update our development-hours-per-Learning-Point metrics for different media.

| Learning-Objectives-Based Estimating of Workshop Development | | | | 9 Learning | | |
|--|-------------------------------------|-------------------------------|--------------------------------|------------|-------|-----------|
| Project: | Sample PM Class Learning Objectives | Cost/hour | Quest for Better Estimates® | | | |
| Date: | | \$100 | ©1997,2002,2006 ProjectExperts | | | |
| Version: Record this estimate's version #, timing in the project, and major changes since the last estimate. | | | | | | |
| <input type="text"/> www.projectexperts.com | | | | | | |
| A. Identify the Scope Components | | Complexity of Object to Learn | | | Class | Hours |
| Module or Section, and the Learning Objectives | | Simple | Average | Complex | Hours | of Effort |
| Learning Objective 1 | | | | | 0.40 | 5 |
| A. Describe what is meant by a project, project management, the project life cycle, and a systematic process of project management. | | Level 1 | 1 | | | |
| | | Level 2 | | | | |
| Exercises | | | | | | |
| Learning Objective 2 | | | | | 1.90 | 38 |
| B. Given a project analysis report, analyze its content and, using a worksheet, summarize the key parameters of a project, including objectives, deliverables, budget, schedule, and | | Level 1 | | | | |
| | | Level 2 | | 1 | | |
| Exercises | | | 1 | | | |
| Learning Objective 3 | | | | | 1.90 | 38 |
| C. Formulate, in writing, guidelines for deciding under what conditions the project manager should bring to management's attention significant changes in assumptions about the | | Level 1 | | | | |
| | | Level 2 | | 1 | | |
| Exercises | | | 1 | | | |
| Learning Objective 4 | | | | | 0.40 | 5 |
| D. Name the six "feasibilities" and describe each one. | | Level 1 | 1 | | | |
| | | Level 2 | | | | |
| Exercises | | | | | | |
| Learning Objective 5 | | | | | 0.70 | 8 |
| F. Define teambuilding and describe four basic elements of teambuilding. | | Level 1 | | | | |
| | | Level 2 | 1 | | | |
| Exercises | | | | | | |
| Learning Objective 6 | | | | | 2.50 | 54 |
| G. Match these terms with their definitions: • control period • compon-ent • decision gate • deliverable ... | | Level 1 | | | | |
| | | Level 2 | | 1 | | |
| Exercises | | | | 1 | | |

Analysis

Clearly, rather than estimating how much time it will take to deliver some of these Learning Objectives, they require more work before beginning workshop development or modification. Those entries in red on the model above (in the Complex column) need special attention. Note that the model shows the estimated cost to deliver, the classroom hours, and the hours of effort needed to develop this content (given some hidden metrics). Pretty cool, huh? Those who are interested in the model can contact us to find out more about it.

Of course, there is far more to developing effective PM Learning than good Learning Objectives. But we find too many cases where the offerings look more like *leaning objectives*—the classes apparently depend on more than good design and clear measurements for their success. One additional topic, for discussion at some later date, is the shocking difference between Pedagogical training and Andragogical training—and the fact that too much PM Training today mistakenly uses the former approach.



Pedagogical training is the way you train children, and is practiced all the way up through most colleges and universities. And Andragogical training, which is more appropriate for adults and those with life experience, is all too rare in the PM Training world. But, that is a topic for another day.

Summary

The purpose of this article is to help you improve the use of Learning Objectives, especially in Project Management learning. Improved Learning Objectives can result in improved learning experiences. Improved learning experiences result in improved PM Performance. Improved PM Performance results in increased organizational success.

And, we have shown our estimating model to illustrate how good Learning Objectives also help to estimate learning development costs, and actual classroom time needed to convey the knowledge beginning-point. Unfortunately, there are too many variables (the unknown-unknowns) to estimate the resulting Time To Performance, every knowledgeable Manager's goal.

And speaking about Managers, and especially Project and Program Managers: If you intend to improve your PM Performance, classroom training can be a key part of the process. But it is just the beginning of the Learning process. The real learning occurs on the job, in the real world. Poor Learning Objectives help no one; lists of topics instead of clear learning objectives are even worse, no matter how catchy the keywords. ***Demand better Learning Objectives***, as the best way to evaluate your options for improving PM Performance, and then measuring your results.

About the Author



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A Project Management practitioner since 1970 and PM consultant since 1982, he improves Enterprise or project team PM competence, efficiency, and Performance. Mr. Goff speaks at industry events, offers coaching and consulting services, and presents workshops of great interest to Executives, Managers, Project Managers and Team Leaders, technical staff, and individual contributors.

His Project Management tools and methods are used by Government Agencies, Enterprises and Consultancies on six continents. His workshops have been licensed by other consultancies to enhance their own offerings, by large businesses for their internal use across multiple nations, and by government agencies. He combines his PM Process insights with wide-ranging experience in projects and programs, and with sensitivity for the human aspects of projects. The result: Measurably increased ***PM Per4mance™***: Portfolio, Program, and Project Performance. To contact Stacy: stacy@projectexperts.com.

References

- ⁱ Anderson, Lorin W.; Krathwohl, David R. et. al. *A Taxonomy for Learning, Teaching, and Assessing. A Revision of Bloom's Taxonomy of Educational Objectives*. Addison Wesley Longman, 2001; ISBN 0-8013-1903-X (soft cover).
- ⁱⁱ Quest For Better Estimates® is a simple Excel tool for performing very early estimates (from Portfolio through Requirements) for Information Technology projects. While the tool is relatively simple, the concepts behind it are complex. The Learning Points estimating model is just one part of the tool.

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